

# Movi-Mente



Move better, learn better



## Erasmus+

Enriching lives, opening minds.

# MOVI-MENTE

## Move better, learn better

Neuromotor and educational activity project for the development of precursors to learning and intellectual potential for children from 3-6 years old



IN COLLABORATION WITH



PATRONISED BY



SOLFERINO



VOLTA MANTOVANA



COMITATO REGIONALE LOMBARDA Mantova



ORGANISER





# MOVI-MENTE

## move better, learn better

The name Movi-Mente is a play on words in Italian. Movimento means movement. Movi alone suggests movement and Mente alone means the mind. The two together mean that the development of movement and the mind work in unison and are interdependent.

In Italy compulsory school lasts about 10 years, and the start of school for every child is a very important step. This initial period is also sometimes difficult and not always under the most favorable conditions.

In the last few years, it has become more frequent to hear primary school teachers complaining about children “not being ready and sufficiently prepared” for attending school for various reasons. Common observations are: children have more difficulty simultaneously watching and understanding the teacher as they explain, problems with copying from the blackboard, or carrying out written dictations, problems with maintaining concentration while reading, problems with posture while writing, with becoming tired quickly, or continually losing their place on the page in their notebooks, that they have problems finishing their work even when given quite easy tasks, etc... Explaining this ‘lack of preparation’ in a general way is difficult; it becomes very complex because the causes can vary widely and especially when they date back to before the entrance into preschool. (It should be noted here that although compulsory school doesn’t start until the age of 6 years old most children in Italy begin at 3 years old and have 3 years of preschool before entering primary school.) We know for certain that the most important resources that a child can draw from when they begin school are

developed between birth and three years old, and that these become perfected from three to six years old. Problems with scholastic achievement may be caused by neurological, linguistic, psychological, social and also, most importantly for our project, motor based problems. If a child isn't able to focus on an adult speaking and listen at the same time they could have neurological or psychological difficulties, but it could also be a sign of not having matured their visual- perceptive ability that depends on the vestibular maturity and therefore is a motor ability. A further example would be a child that presses down too hard with their pencil while writing. They could simply be holding the pencil incorrectly, or they may not have the muscle tone necessary for writing, or not have developed

We know for certain that the most important resources that a child can draw from when they begin school are developed between birth and three years old, and that these become perfected from three to six years old.

the correct way to run which is a correlated motor skill. The above examples are just a few of the many possibilities that depend on a lack of neuromotor instrumentality and prerequisites. We maintain that all children beginning primary school should possess the core skills that will help with learning and that promote the child's well being. The educational and neuromotor project "Movi-Mente" proposes **educational and specific motor skills activities, fundamental for motor coordination, relational skills, and above all, intellectual skills for preschool children.**

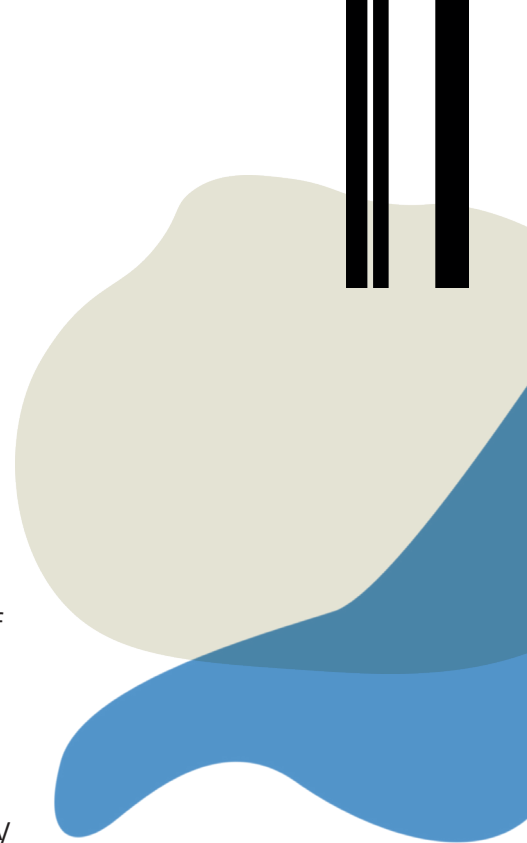
The project was devised with a very specific educational goal in mind that promotes a growth path suitable for this specific preschool age group. This project and the growth path are based on movement.

We strongly believe that motor activity should no longer play only a secondary role in the life of a child, but should become a fundamental element of the existential experience of each individual, an indispensable element of higher learning and cognitive achievements, fundamental for future inclusion in primary school.

Encouraging children to move and by offering them a “tailor-made” educational program, therefore, does not only mean offering him or her experiences of movement, but above all, increasing his intellectual growth.

The “Movi-Mente” project is based on this essential assumption: through movement, the opportunity of movement and experimenting with movement of one’s own body all children are offered the possibility to change and stimulate motor, relational and intellectual growth.

**Offering a child the opportunities to move doesn’t only mean giving them the opportunity of movement but also more importantly to improve intellectual growth.**



# THE “MOVI-MENTE” EXERCISES

The project focuses its attention and its educational practices in an attempt to encourage the increase in basic motor coordination and the increase in neuro-motor prerequisites important for the acquisition of instrumental learning skills.

For example, writing, which would seem a purely cognitive function, is in effect a motor act that depends on complete neuro-sensor-motor maturation and for this reason requires: head and shoulder control, visual convergence, hemispheric dominance, correct hand grip, hand-eye coordination, etc.

The proposed activities, during the “Movi-Mente” course, include a series of playful and educational strategies that lead children to perform five basic exercises in a **quantitatively and qualitatively increasing manner:**

1. rolling
2. crawling (military crawl)
3. somersaults
4. running (cross pattern of upper and lower limbs)
5. gripping (hand and arm movements) and swinging

## **Secondary Exercises:**

1. Walking on all fours
2. Jumping with feet parallel



# 1. ROLLING

Rolling is the movement from a prone position (lying stomach down), rolling on to one side and continuing into a supine position (lying back down), after which the sequence continues, from supine, on the side and then prone (initial position). **Rolling represents a mass movement performed along the body's axis**, involves very little gravitational activity and little balance, due to the support surface being extremely large and the center of gravity kept at the lowest possible point.

The center of gravity moves laterally while the shoulder blade and elbow act as a reference point during the rolling movement. The arms are folded over the chest.

In the course of the rolling movement, a whole series of

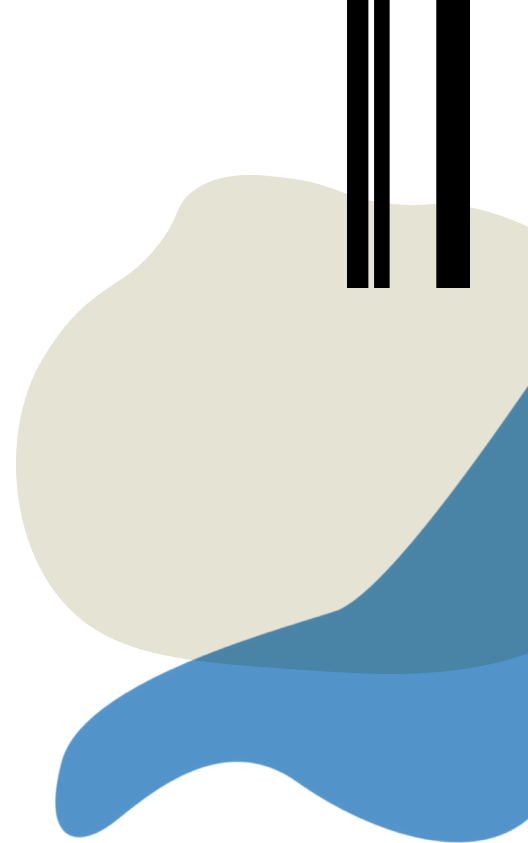
The rolling pattern is a locomotor process as it relates to posture, straightening and phasic movements, it also requires adequate head control.

unstable situations arise in reaction to the displacement of the center of gravity. The execution of rolling on the floor involves the continuous loss of position that is immediately regained.

The rolling pattern is a locomotor process as it relates to posture, straightening and phasic movements, it also requires adequate head control.

In carrying out rolling, the greatest difficulty encountered by children is the ability to follow a certain direction in space. In fact, the difficulty lies in the impossibility of maintaining an orientation in space and a direction while moving forward, as it is difficult to give continuity to the visual aims.

Rolling can be performed on verbal delivery: a child performs



## Rolling represents a mass movement performed along the body's axis

the exercise by counting and learning to respect the verbal delivery.

**Rolling is a prerequisite for somersaults.**

This exercise allows a significant improvement in:

- exploratory eye movement on the horizontal plane;
- self-perception;
- tactile sensability;
- posture;
- balance;
- general muscle tone.

## 2. CRAWLING (military crawl)

Crawling is an innate reflex movement belonging to the set of primary and primitive vital functions of hunting/gathering and fight or flight.

In the preparatory phase of crawling, the child beginning in the prone position, brings his arms, with forearms bent, close to the trunk, the hands are positioned at the level of the shoulders, slightly more external, while the legs are slightly flexed. In the execution of the exercise, the child performs the forward movement by coordinating the upper limbs with the lower limbs as with a military crawl: left arm bent forward and right leg bent with knee positioned externally moving forward, followed by the right arm and left leg.

The friction of the body on the flat surface where the sliding takes place due to gravitational force offers tactile stimulation and resistance along the body: the subject will have to organize the movements in a crisscross pattern if he wants to move forward with less effort.

The most interesting results obtained through the stimulation offered by the sliding exercise are:

- increase in muscle tone;
- better control of the head and its rotation;
- straightening of the scapula-humeral areas;
- differentiation of the muscular activity of the trunk;
- facilitates the differentiated activity of the lower limbs;
- tactile sensory stimulation of the whole body;
- visual convergence progress;
- visual stimulation;
- improved swallowing;
- control of drooling;
- improved chewing;
- improved speech;
- improved concentration carrying out tasks;
- maturation or recovery of hemispheric dominance;
- improvement of human-eye coordination;
- improved running;
- improved running in the cross pattern;
- achievement of basic motor coordination.

If performed correctly, crawling allows the rapid achievement of motor coordination necessary for the performance of normal physical activities.

### 3. SOMERSAULTS

Somersaults are a loss of balance as the body moves forward, with consequent rolling of the body segments: nape, upper part of the back, lumbar area, pelvis, followed by the recomposition of the limbs and the body and a return to the initial position.

This is not a particularly difficult movement; in fact, small children tend to do it spontaneously; however, sometimes



the discomfort of being in an unusual position can generate fear. Using the appropriate precautions, the child learns the pattern in a relatively short time.

In performing somersaults, the legs are spread apart and the torso bent forward, the hands rest on the ground with the palms down, the head flexes towards the chest, the head must not touch the ground during the rotation.

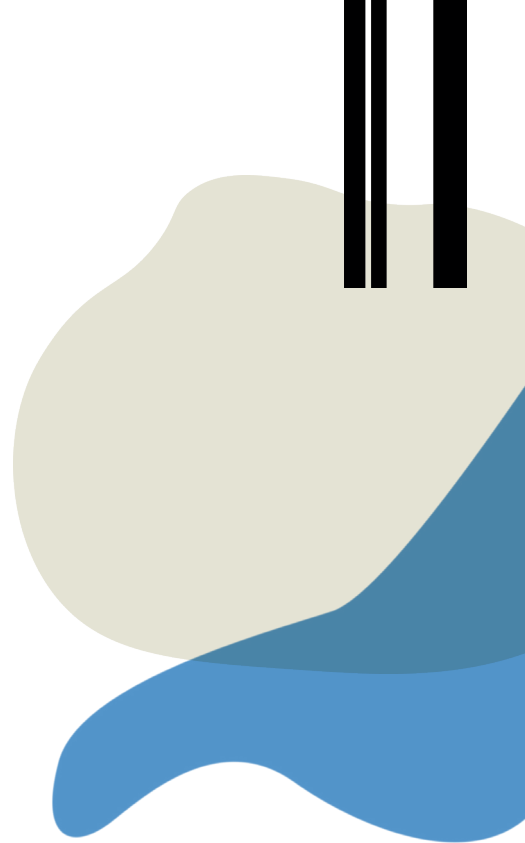
Since somersaults arise from a loss of body balance, this exercise can be taught in gradual steps, for example by positioning oneself behind the child, giving the verbal instruction "open your legs" and at the same time leading him to do the motions; it is also possible to accompany the movement of the head with the hand, making sure that it is positioned correctly and to help with the tipping forward. By doing everything gradually it allows the child to acquire control of his body's movements, until he understands the exact execution of the exercise.

It is the loss of position and the conquest of a new one that allows the child to control his own body.

This type of stimulation is an important aspect in improving vision and in correcting certain reading difficulties, often due to ocular motor problems.

Somersaults are useful for the following purposes:

- increased balance;
- favors tactile sensibility;
- improvement of motor coordination;
- improved posture;
- increased muscle tone (especially of the upper limbs);
- improved walking;
- learning or improvement of running in an arm and leg cross pattern;
- improvement in the use of vision (visual convergence and vision-hearing-language independence);
- increased ocular exploratory mobility



## 4. RUNNING (cross pattern of upper and lower limbs)

Running is a higher motor activity, as it requires the child to activate more elaborate sensory-motor patterns, from the point of view of sequencing and speed of actions. Only recently in history has man begun to run in an upright position and in a perfect cross pattern.

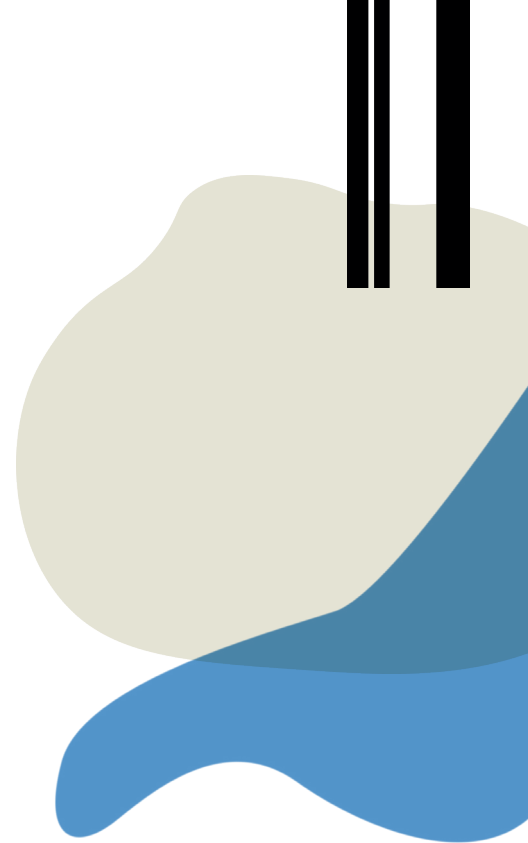
Running in an arm leg cross pattern consists in a complex group of fast forward movements with jumps, performed by alternating the simultaneous lifting of the left arm and right leg followed by the right arm and left leg, with the torso slightly leaning forward. This is an articulated pattern that requires the presence of certain prerequisites: balance, motor and visual coordination, visual convergence, spatial orientation and muscle tone.

Improvement in running correctly allows children to acquire those motor automatisms and fundamental skills that are indicators of various sensory and motor function maturity.

Studies have found that children with handwriting problems have not matured running in a perfect cross pattern.

Running in a cross pattern is proposed in order to:

- improve motor coordination;
- improve breathing;
- strengthen muscle tone;
- improve balance;
- increase visual-motor functions.



## 5. GRIPPING (hand and arm strength exercises)

To improve grip strength you need a stick or a horizontal ladder. The child is lifted and holds onto a peg with both hands and hangs with his feet dangling as long as he can maintain this position, as his body mass and gravity pull him to the ground. When this is no longer possible, he will let go and fall back on the mattress positioned under the ladder.

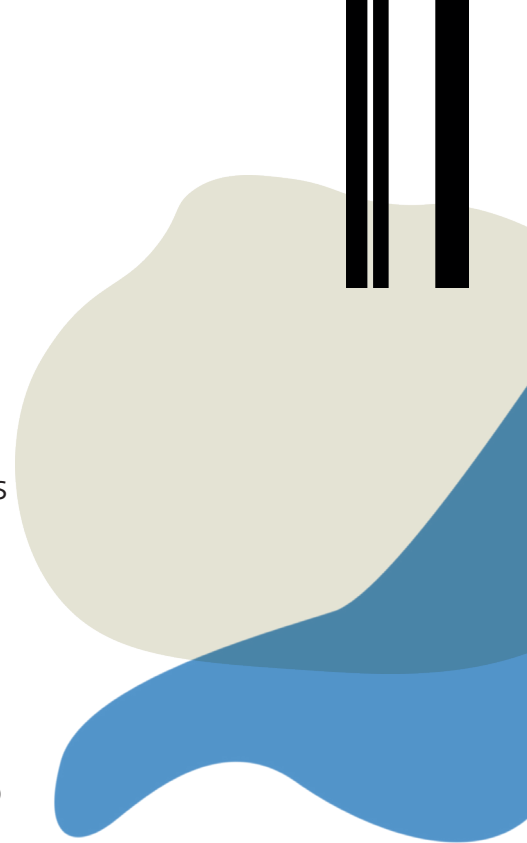
Strong hand grip becomes possible if the arm has good muscle tone, but especially when the back muscles are able to stabilize the trunk and shoulders.

For the correct execution of this exercise it is essential that the thumb is turned under the peg and the fist closes around it. Correct maturation of muscle tone and grip strength is fundamental for functional handwriting.

Mature muscle tone and gripping are fundamental for writing correctly.

Gripping is proposed for the purpose of:

- strengthening muscle tone of the upper limbs, shoulders and back;
- strengthening hand grip,
- improving manual skills,
- improving breathing, as the position adopted with the grip favors while not excessively the increase in the volume of the chest. This allows for more air, the brain's main nutritional food, to be introduced.





## 6. SWINGING

The term swinging refers to a type of locomotion performed by the child along horizontal pegs (jungle gym): starting from one end, he/she advances alternating the grip of a hand from one peg to the next.

This exercise requires gripping strength in both hands because for a few seconds the weight of the body is supported by only one hand. Furthermore, the whole body is called on to perform the movement. While one hand is engaged in gripping, the brain organizes the movements of the trunk, pelvis and lower limbs that follow the shoulder and arm. Meanwhile the other hand tries to hang on to the next peg.

In addition to a good degree of general motor coordination, this whole locomotor pattern also requires ocular-manual coordination: the eye focuses on the peg that the hand must grip. Convergence and visual attention will contribute to the motor organization of the exercise both in the preparatory and performance phases.

Once you have acquired the ability to move on the horizontal ladder with the swinging movement going forwards, you can move on to perform the same movements backwards, sideways, and turning around.

Swinging is useful for:

- strengthening muscle tone;
- specializing and strengthening the muscles of the back, trunk and shoulders;
- increasing motor coordination in a suspended state;
- strengthening hand grip;
- improving hand-eye coordination;
- improving arm independance;
- stimulating balance.

**Eye convergence and visual attention contribute to an exercises motor organization in its preparatory and execution stages.**

# SECONDARY EXERCISES

## 1. CRAWLING ON ALL FOURS

Crawling on all fours consists in moving while placing the hands and knees on the ground and maintaining control of the head and body. It represents one of the first ways that humans use to move in space as early as seven months old.

To move forward, the child must coordinate the cross pattern of the upper and lower limbs (right arm-left leg and left arm and right leg).

With the quadrupedal gait external friction disappears, the hands and knees are still on the ground, they carry out an action of body support.

The crawl is performed in order to:

- stimulate and strengthen visual convergence;
- improve the muscle tone of the hands and shoulders;
- strengthen motor coordination;
- improve hand-eye coordination.

## 2. JUMPING WITH FEET TOGETHER AND PARALLEL

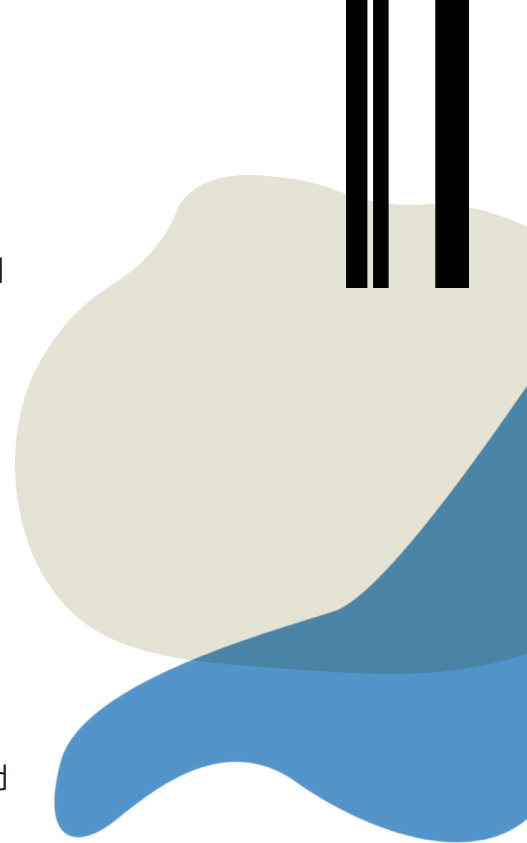
This exercise is performed in sequences of several consecutive short jumps. The exercise of jumping consists in the execution of a succession of small jumps with parallel feet, both jumping in place and while moving along a chosen path.

In the preparatory phase, the visual focus is where you'll land, the legs flex, the torso bends slightly forward while the arms give momentum. The child leaves the ground by stretching the body. During the aerial phase, the child should maintain muscle control of the body and limbs, in

preparation for landing. Upon arrival, the parallel feet should rest on the ground while the knees and pelvis joints cushion the landing by flexing. The arms accompany the movement in regaining the balance of the body. These stages of preparation, execution and reassembly on the ground depend on the child's level of neuromotor development. For the jumps, the same movements recur, even if they all take place on the same level and in rapid succession and while advancing. It requires a continuous loss, recovery and readjustment of posture, control of the body and limbs, trying to regain the balance that moves continuously forward and while maintaining the set path.

They are performed for the purpose of:

- stimulating the vestibular apparatus;
- maintaining balance in the arial phase and the other phases;
- improving motor coordination.





# TRAINING PARAMETERS: FREQUENCY, DURATION AND INTENSITY

To achieve *motor memory*, to 'learn' a movement, and for it to become automatic, each motor skill needs training.

The three principles of motor training are: *intensity, frequency and duration*.

*Intensity* is the effort with which a sequence of movements is carried out, by the speed of execution in relation to the effort required for it to be performed.

*Frequency* is the number of repetitions of the motor sequences in a set period of time, in a day, or in an hour.

*Duration* is the continuous time of the motor activity, the overall period in weeks or months that the exercise is repeated.

Evaluation of the parameters of frequency, intensity and duration is not easily definable using predefined tables, and can only be carried out with a comparison of multiple aspects specific to the individual.

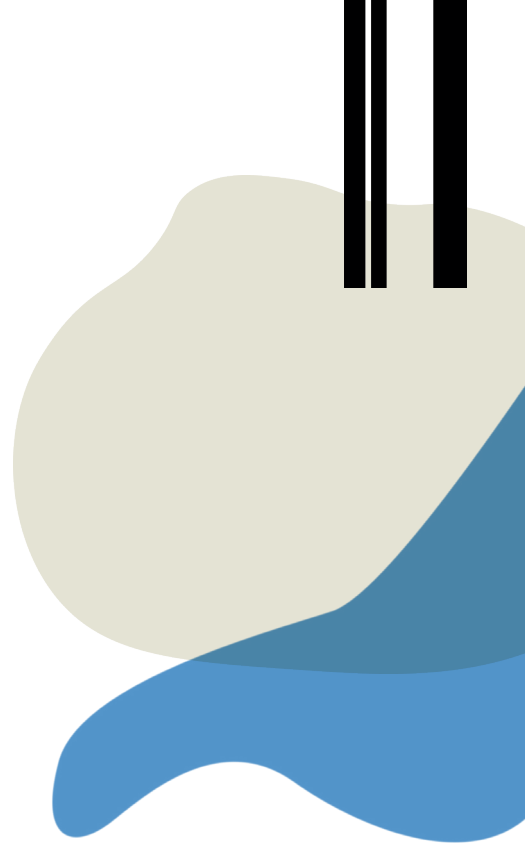
First of all, the instructor must consider the following: the level of understanding of what is being asked (the minimal motor delivery), the level of self-awareness, the motivational level, the child's frustration tolerance, the emotional-affective aspects, and the social aspects, the salient aspects of his personality and the level of general health.

Wisdom is needed from time to time in weighing the proposed activities and above all their intensity, frequency and duration. Only our experience and careful evaluation of the child will allow us to better evaluate how much he or she has to work. There are no pre-established rules.

The opportunity to constantly repeat these exercises with an **ever increasing** *frequency, duration and intensity*, allows

memorization of them and building a “mental image” of the movement, or motor pattern, which will later become motor memory.

The strength of these activities is based above all on the information deriving from the locomotor complex system that reaches the Central Nervous System. All this involves an adjustment, differentiation, specialization and coordination of the nerve cells both at the medullary level, the brain stem, the cerebellum... up to the cortex in the corresponding areas. The basic stimulation, determined by a precise motor exercise, is joined by an auxiliary from other parts of the body, which is still part of that movement . They “join” and facilitate the locomotor response and a deep stimulation that reaches the cortical areas. For example, with running, in addition to the input from the muscle and joint receptors, those coming from the visual and vestibular receptors are also added.



## OPERATIVE AND EDUCATIONAL STRATEGIES

During “Movi-Mente” lessons all exercises are always proposed as games.

The playful aspects of each exercise are accompanied by an important educational element, that changes based on the age of the children and on their capabilities, ability, inclinations and on the individual difficulties of each.

A teacher must be able to manage different aspects of these lessons: games, frustration and tiredness level management, competition, etc... and therefore be able to judge the strategies that will work best at the correct time for each age. For example, competition isn't the best strategie for 3 year

olds. It's fundamental to be able to find a balance between all aspects in order to be able to increase each child's motor activity experiences.

The necessary condition for this to happen is the acceptance and sharing of the "rules" by all participants. These rules must be clearly personified by the educator who, through clear communication, articulates and demonstrates them directly and indirectly. Attention to rules becomes very important, as they serve to organize modality and the timing for the execution of the exercises and to offer order and serenity during the lessons.

*"Rules, Rites and Rhythms"* become a sort of slogan that has strong educational value and accompanies every gesture of the educator in the activities proposed

**Rules** are an integral part of education and represent a necessary tool to guarantee children healthy, peaceful and balanced growth. Rules are indispensable because they provide reassurance and limits, that is, they offer the child precise reference points.

Helping children understand that rules play an important part in living together in any environment is a complex process, and therefore it is the adult that needs to be a guide.

The teacher must be strict but at the same time welcoming. By strict we are referring to the attention that must be paid to all children so that they can complete the required task. By welcoming we mean that firmness should not be confused with aggression. For example, in the initial greeting, if the child is unable to stay in line the teacher guides not only with instructions but also with or his or her hands to help the child understand what he must do. If the child still has



trouble understanding, the teacher needs to keep him close and show him until he is able to do it by himself.

The hour of the lesson is marked by "rites" such as the initial and final "greeting" that marks the moment of the beginning and end of the activities. This rite is performed through a very specific code that respects the canons of order, silence, thanks to the "educator", sharing and participation.

How you begin the lesson is also very important; each child is invited to put their own things in order: shoes, socks, etc...

Saying goodbye, having a place for objects (flipflops), an opening and a closing game, giving out prizes and / or "ghost" medals, are all rituals that help children to recognize routines and this reassures them and makes them feel safe.

The lesson lasts one hour, in which children are called and motivated to perform the exercises. The "rhythms" are managed by the educator. His or her professionalism requires a qualified preparation and a personality that is in tune with the group of children.

The instrument that marks the rhythm of the lesson is the teacher's voice and it is essential to know how to use it.

A well-set voice with the resulting physical posture communicates much more than verbalization. We invite you to adopt an approach similar to that of the theatre while not falling back into too much comedy that would be detrimental to the recognition of the teacher as a guide.

Years of experience have led us to believe that children need activity, in short, they want 'to do and move' more than 'to listen', and in fact giving too many explanations is a distraction and makes them lose focus, so you will waste time attracting their attention and this in turn slows down the pace of the lesson. Stopping to explain for more than 30 seconds is not the best way to achieve Movi-Mente's goals. Clearly, you can spend more time talking if you realize that

a game has been particularly intense and you need to give some recovery time.

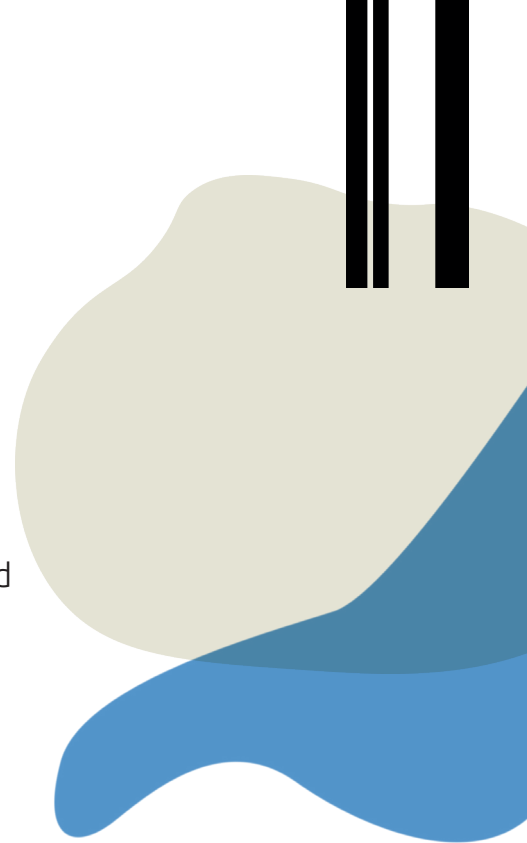
If the lesson is 60 minutes it should be as close as possible to 60 minutes of activity.

It is also important to establish the last stages of the lesson which must be a Wagnerian crescendo of physical and emotional intensity, the child must finish the lesson tired and happy.

The motor activities become motor memory and are gradually learned through the three characteristics of: frequency, intensity and duration. The class rhythm, therefore, becomes more and more elaborate as the children's abilities grow.

**The teacher's educational activity choices encourage and motivate** and this helps children to achieve ever greater goals beyond their actual abilities. Their reactions often startle you, they respond enthusiastically to test their skills. The role of the educator becomes of fundamental importance to foster a stimulating environment in which children have the opportunity to experience motor activities appropriate to their age. The educator becomes the interpreter of an operational strategy that stimulates children in a fun way. Setting one's work on the management of the emotional sphere of children becomes the educational strategy to allow them to propose motor exercises in an increasingly quantitative and qualitative way.

The use and management of imagination is very important because it involves and attracts the children's attention so much that they become an active part of the lesson. For example, in our experience, a race exercise is introduced as a race of "motorcycles, cars, trucks, motocross", with established routes (rules) and of **increasing duration**.



# SOME OPERATIVE STRATEGIES

The strategies that we have found most effective in our years of experience with children are ones in which we alternate different types of exercises and communicative styles to avoid too much repetition, which in children can lead to boredom.

Among these we would like to have you note:

- A.** Use short instructions that are to the point but clear.
- B.** Familiar images for children (cartoons, superheros, etc...)
- C.** "Nonsense" to minimize crying
- D.** Mimicking, hand movements and theatre acting
- E.** Dialogues and not monologues, so that children become used to always responding.

## TUTORING

It's an extraordinary educational tool that allows the teacher to work more efficiently especially with groups of different levels.

There are different strategies that can be used:

- 1.** A child acts as another child's teacher.
- 2.** A child acts as the teacher for a small group of children.
- 3.** A child acts as the teacher for the whole group.
- 4.** A child with certain difficulties helps another child that has problems.

It's also possible to do the opposite and put a less able child as the leader in order to make them feel special and valued.

## COMPETITION

Competition is a natural reaction for people, and is one of our innate behavioral survival functions.

It's a wonderful motivational tool but should not be abused. Obviously becoming overly competitive isn't usual in young children but attitudes can be pre-formed which can then become structural.

In 3-4 year olds their interest is more directed towards the game than the competition, while with 5-6 year olds games have a different value and therefore competition takes on more importance.

## "A TYPICAL LESSON"

The Movi-Mente course starts in September and ends in May / June of the following year, so it lasts about nine months.

The lessons should take place twice a week on different, non consecutive days and each lesson should last a minimum of 60 minutes, for example Tuesdays and Thursdays. It's preferable that the gym that hosts the course has changing rooms to offer families a place to teach their child to change and put away their belongings that they will then find in the same place at the end of the lesson.

Clothing must be comfortable and not too heavy, i.e. long trousers and a long-sleeved T-shirt, both of cotton. The lesson will take place barefoot, therefore children only need flipflops to move from the locker room to the gym where a specific place will be designated for the shoes to be left before stepping into the activity area.

Punctuality is recommended, time is essential to create order and recognition on the part of children. Each lesson is different because the teachers and pupils are different, but we would like to give you an example of the type of lesson we use:

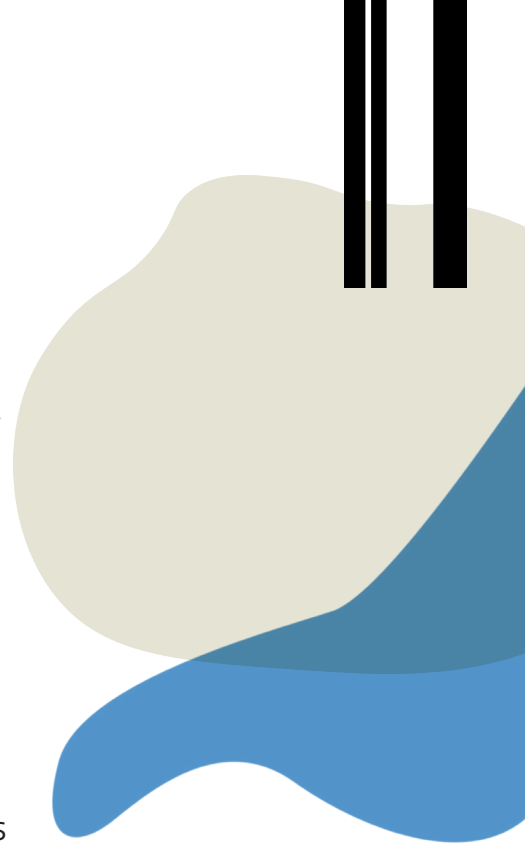
On the first day of the course there is usually great chaos: there will probably be children who will cry, who will want to run to their mothers, who will be shy and attached to their parents' legs but there are also those who will be super enthusiastic and excited to let go of their parents' hands to experience something new.

The lessons begin with a smile. Take the child by hand to create empathy and welcome them to the class. Try to do this with each individual child in order to create an immediate bond. After everyone has been welcomed, clap your hands once and announce that the lesson has begun. Position the children and yourself for the initial greeting. This moment is important and each child needs to be shown the proper way and what we expect. Remember not to exceed 5 minutes.

One side of the gym is chosen as a "base" where the children gather at the beginning of each exercise. In our gym it's called a "den", as in a fox's den, and the image recalls a safe place where they can calm down and listen to the teacher's instructions.

The first part of the lesson must be centered on involving the children in the dynamics of the proposed exercises and to get them excited. It's a "warm-up" activity using play.

Therefore, role-playing games such as "wolves and lambs" can be proposed: the wolves, walking on hands and knees, move around and capture the running lambs, which are transformed into wolves until there are no lambs left. Or you can propose a race where children identify themselves with motorcycles that race on a track, by running around the gym on a preset 'race track'.





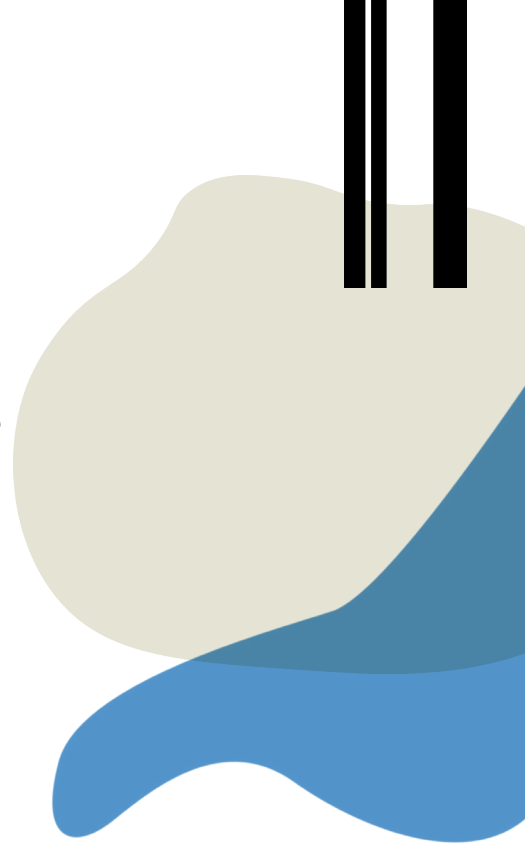
After an exercise or a game where intense effort is required, an activity that does not require a large expenditure of energy, such as rolling, can be proposed. Positioned on one side of the gym, the children are asked to reach the opposite side. Over time, some weeks and months of the lessons the skills will improve and the activity can be longer and more complex, for example accomplishing five or six laps, rolling along the same route.

At this point crawling is proposed, in our gym and the children are transformed into crocodiles and carry out “missions”. This is an exercise that requires a lot of effort from a physical and mental point of view. It requires energy and effort and the children, in the long run, will surely resist the request to perform it. As teachers we are aware of how difficult it is for the children, and for this reason, we must be ready to use different strategies at this point to stimulate everyone to complete the exercise.

Following such an intense effort, you have to change the pace by proposing a game or by using the horizontal monkey bars and proposing the swinging and gripping exercises in a game form.

Somersaults can be proposed during the lessons but first you must make sure to teach them the correct way. Safety is essential. It's necessary to make sure that the somersault is performed correctly by positioning the head in the correct way and then, when they have learned how to do them correctly, you can propose increasing quantities.

Later, jumping and crawling on all fours can be proposed. The lesson usually concludes with one of the activities used regularly at the end of lessons reminding them it is nearly time to say good-bye. Our lessons end with a final good-bye, all together, and then everyone goes home.



## BIBLIOGRAPHY

- ANGELA P., *Da zero a tre anni*, Mondadori Libri Spa, Milano, 2015
- BERTHOZ A., *Il senso del movimento*, McGraw-Hill Education, Milano, 2003
- BUEB B., *Elogio della disciplina*, Rizzoli, Milano, 2007
- BUSER P., *Il cervello allo specchio*, McGraw-Hill Education, Milano, 1999
- DEHAENE S., *Imparare. Il talento del cervello, la sfida delle macchine*, Cortina Raffaello Editore, Milano, 2019
- DELACATO, C. H., *Problemi di apprendimento e organizzazione neurologica*, Armando Editore, Roma, 1980
- MANDOLESI L., *Neuroscienze dell'attività motoria. Verso un sistema cognitivo-motorio*, Springer Verlag Editore, 2012
- MONTESSORI M., *Il segreto dell'infanzia*, Garzanti, Milano, 1999
- MONTESSORI M., *La scoperta del bambino*, Garzanti, Milano, 1999
- PEDRINAZZI M., *Lo sviluppo neuro-fisiologico umano da 0 a 6 anni*, Dispensa n.1, 2011
- RESTAK R. M., *Il cervello del bambino. Viaggio nel mondo inesplorato della mente infantile*, Mondadori de Agostini, 1995
- RIZZOLATTI G., *So quel che fai. Il cervello che agisce e i neuroni a specchio*, Cortina Raffaello Editore, Milano, 2006
- SANGALLI A. L., *Attività motoria compensativa*, Trento Unoedizioni, Trento, 2003
- SPITZER M., *Demenza digitale. Come la nuova tecnologia ci rende stupidi*, Corbaccio Edizioni, Milano, 2012

