PETIT

Title: PETIT GUIDELINES FOR THE DEVELOPMENT OF CHILDREN'S MOTOR SKILLS

University textbook with interactive content on the methodology of children's motor skills development

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INTRODUCTION

The purpose of this university textbook is to provide a comprehensive and evidence-based framework for understanding and applying a didactic model for motor skill development in children. It is intended primarily for students of kinesiology and physical education, as well as for coaches, instructors, and professionals working with children and youth in various sports and physical activity programs. The content is structured to offer theoretical foundations along with a practical three-level progression model (first-second-third level of variability) for the systematic development of motor skills.

The content targets children up to the age of 12, a critical developmental period before puberty when foundational motor learning and physical literacy should be prioritized. Research and practice consistently show that insufficient time is allocated to motor skill development in training sessions, and that many coaches lack awareness or adequate knowledge of the importance of structured motor learning during early childhood. As such, this textbook addresses a key gap in practice by offering an adaptable and innovative methodology to enhance motor skills and physical literacy, consequently.

In addition to the written theoretical content, the textbook is complemented by a structured video training format (VTF) with the evident examples of training practice. The VTF introduces a three-level model of task variability, each level designed to promote progressive motor learning and refinement.

The final section presents guidance on how to apply and adapt this model across various sports contexts, including team-based disciplines, enabling broad application for both educational and sports environments.

This textbook aims not only to inform, but also to inspire more intentional and scientifically grounded approaches to motor skills development, empowering future professionals to implement best practices in fostering lifelong physical competence and enjoyment in lifelong physical activity and sport.

NEUROMECHANICAL BASIS OF MOVEMENT

The **neuromechanical basis of movement** explores how the structure of the human body (muscles, bones and joints) and the central nervous system (CNS) interact to produce movement of the body. Understanding this relationship is crucial for professionals working with children and young people in order to promote their optimal physical and motor development and to prevent potential injuries during training process.

Human Biology and Movement

Human movement involves a complex interplay of muscles, bones, and joints working together to create force and to produce motion and maintain balance. At a basic level, the **musculoskeletal system** serves as the framework for movement:

- **Bones** provide structure, support, and protection to vital organs.
- **Muscles** generate force by contracting and pulling on bones, allowing movement at the joints.
- **Joints** act as pivot points, where two or more bones connect and enable movement.

Muscle contractions can either be **concentric** (shortening the muscle, like lifting a weight), **eccentric** (lengthening the muscle under tension, like lowering a weight), **eccentric-concentric** or **isometric** (muscle tension without changing length, like holding a pose). These contractions are coordinated and controlled to produce the various forms of movement we can see in everyday physical activities, sports, and physical exercise.

Central Nervous System (CNS) and Motor Control

The **central nervous system**, which consists of the brain and spinal cord, plays a crucial role in initiating and coordinating movement. The CNS receives sensory information from the body and environment, processes this information, and sends signals to muscles to produce desired movements. This system is organized as follows:

- **Motor Cortex**: Located in the brain, the motor cortex initiates voluntary movements. It sends signals through the spinal cord to the appropriate muscles.
- **Cerebellum**: This part of the brain fine-tunes motor commands, ensuring smooth and coordinated movement. It plays a key role in balance and timing.
- **Spinal Cord**: The spinal cord acts as a communication pathway, transmitting signals between the brain and muscles. It also processes some reflexive movements without the brain's direct involvement.

Motor neurons are specialized nerve cells that carry signals from the CNS to the muscles, instructing them to contract or relax. These neurons operate in motor units, which include a single motor neuron and the muscle fibers it controls. The size and number of motor units involved in a movement affect its precision and strength. For example, fine movements, like writing, use smaller motor units, whereas large movements, like jumping, use larger motor units.

Control of Movement by the CNS

To control movement, the CNS relies on a feedback system. **Sensory receptors** in muscles, tendons, and joints provide information about body position (proprioception), muscle tension, and movement velocity:

- **Proprioceptors** in muscles and tendons detect changes in muscle length and tension, allowing the body to adjust positions and movements.
- **Vestibular system** in the inner ear senses balance and spatial orientation, helping maintain stability.

The CNS processes this sensory feedback and adjusts motor commands accordingly, enabling smooth and accurate movement. This loop of feedback and adjustment is essential for tasks like balancing on one foot, catching a ball, or running.

The central nervous system (CNS), comprising the brain and spinal cord, is at the heart of motor skill development, controlling and coordinating movement. Development of the CNS begins in the womb and continues throughout early childhood, making this period a prime time for learning motor skills. Early in development, the brain undergoes synaptogenesis, where neurons form thousands of connections, or synapses. During the first few years, children are particularly responsive to sensory and motor experiences. These experiences stimulate the formation of connections in the motor cortex, the cerebellum, and other parts of the brain responsible for controlling and refining movement.

Myelination is another critical aspect of CNS development. Myelin is a fatty sheath that forms around nerve fibers, insulating them and significantly increasing the speed of nerve transmission. As children grow, myelination progresses in areas of the brain related to motor function, enhancing the speed and efficiency of signal transmission between the brain and muscles. This myelination process enables children to perform movements with greater control and coordination as they age.

Another vital component is neuroplasticity, or the brain's ability to reorganise itself in response to learning and experience. In children, neuroplasticity is particularly high, meaning their brains can easily adapt to new motor patterns and experiences. This plasticity allows children to rapidly acquire motor skills and improve them through repetition and practice, reinforcing neural pathways and making movements smoother and more coordinated.

IMPORTANCE OF THE COMPREHENSIVE DEVELOPMENT OF MOTOR SKILLS IN CHILDHOOD

The development of motor skills in childhood is a gradual process that is influenced by both biological and environmental factors. During biological growth and motor learning, children progress from developing basic motor skills, also known as fundamental movement patterns (such as crawling and walking), to complex motor skills (such as athletic movement, e.g. swimming, technical elements in various sports).

Motor development is understood as the process of changes in motor behavior through lifespan as well as the processes that underlie these changes. Motor development refers to:

(i) "the changes that occur in our ability to move and our movement in general as we proceed through the lifespan",

(ii) (ii) "the continuous changes in motor behavior throughout the lifespan, due to the interaction between motor task requirement, the individual biology, and the environment conditions" or

(iii) "the continuous, age-related process of change in movement as well as the interacting constraints (or factors) in the individual, environment, and task that drive these changes".

Motor development is different from motor learning, although both are changes in motor behavior. In motor learning, changes are already seen in minutes, hours, or days while in motor development changes spend months, years, or decades. In motor learning, we consider **the practice** as this main factor that drives changes while motor development changes occur due to time.

Motor learning is the process of acquiring and changing learnt movement structures (patterns, skills) over time. Professionals (coaches, teachers etc.) play a key role by providing structured and purposeful activities that challenge the CNS and motor skills and help children build a strong neuromechanical foundation for future performance of physical tasks and demands.

The process of growth and development, especially regarding motor skill acquisition, generally slows down and stabilizes by the late teens to early twenties. By this age, the central nervous system (CNS) has largely completed key processes such as synaptogenesis (the formation of new synapses), myelination (the insulation of nerve fibers for faster transmission), and neuroplasticity has declined. While neuroplasticity—the brain's ability to reorganize and form new connections—remains throughout life, it is most active in childhood and early adolescence. After these stages, it becomes more challenging to learn and master new motor skills as efficiently as in youth.

Application for Professionals

Assessing motor skills in typically developing children can provide insights into areas where they may have weaknesses as well as highlight their strengths. These assessments can offer valuable information about the developmental processes of infants and children at risk, enabling the implementation of early intervention programs.

Understanding the neuromechanical basis of movement helps coaches design lessons that support motor skill development. By considering the role of muscles, bones, and the CNS, coaches can:

- **Adapt physical activities** to suit different age groups, focusing on developing coordination, balance, and strength.

- **Identify movement difficulties** early on, providing guidance and support to children who may need extra practice with certain skills.
- **Offer children a higher level** of experiences and opportunities for motor learning
- **Promote injury prevention** by teaching proper techniques and movements that reduce stress on joints and muscles.

For example, teaching children to squat properly helps them engage the right muscles and avoid excessive pressure on their knees. Similarly, exercises like balancing on one leg help develop proprioception and control, essential for many physical activities.

The neuromechanical basis of movement demonstrates the complex interaction between the human body and the central nervous system in controlling movement. Coaches who understand fundamental principles can create effective, age-appropriate programs that support motor skill development, promote physical health, and provide a foundation for lifelong physical fitness. Developing motor skills in childhood is crucial because it forms the foundation for physical competence, and confidence in movement, which are essential for overall health and quality of life. Early motor skill development impacts not only physical abilities but also cognitive, emotional, and social development. During childhood, the body and brain are highly adaptable, allowing children to rapidly acquire and refine skills through practice and play.

As children learn to crawl, walk, run, jump, and throw, they build a diverse set of movement skills, which improve strength, balance, flexibility, and endurance. These skills are critical for sports, recreation, and everyday tasks. Moreover, well developed motor skills in childhood are associated with higher levels of physical activity throughout life, which contributes to long-term health and wellness.

Starting motor skill development in childhood takes advantage of the CNS's natural adaptability and development. Engaging in varied, challenging physical activities helps reinforce neural connections, supporting lifelong movement abilities and coordination. For educators and parents, understanding this CNS development can guide the selection of activities that maximize children's physical and cognitive growth, laying the foundation for a healthy, active lifestyle.

3 STAGES MODEL OF VARIABILITY IN MOTOR SKILL DEVELOPMENT

The innovative model of motor skills development describes **motor skill as a coordinated movement of the human body with the intention of achieving a specific movement goal that is performed with high skill. It is based on the motor and cognitive abilities, motor skill and knowledge (experience) of the individual.**

This chapter introduces the innovative methodology of motor skills development, namely the progressive 3 stages model of variability in motor skill development.

(i) The **first stage (level)** focuses on learning basic movement and emphasizes various coordination tasks to build a solid foundation of motor skills through simple exercises such as rolls, jumps and turns.

(ii) The **second stage (level)** introduces more complex movements and encourages participants to learn through variability and corrections, improving adaptability and precision with targeted exercises and tasks in an enriched environment.

(iii) The **third stage (level)** moves on to sport-specific, targeted exercises in challenging and variable environments, preparing athletes for high performance scenarios. This structured approach ensures gradual progression, emphasizing safety and skill acquisition.

The **first level** explains the concept and importance of movement learning through development of young athletes. The exercises are presented in a way to adopt diverse coordination patterns in different movement tasks. The goal of children at the beginning is **to experience as many different movement tasks as possible**. At the same time we have to take into consideration the principles of safety and other gradual measures.

The **second level** of variability is intended for the children who already passed first level or have previous motor skill experience which enable them to make more complex movements. In this stage the learning process is based **on large variability of exercises with a possibility of making mistakes**, recognizing the movements with the consequence of corrections of speed, height and shape. All exercises are goal oriented with a strong connection with their sport discipline.

The **third level** of variability is based on sport-specific exercises where we teach a single element in a variable environment. At this stage, **some distractions are built into the training process that make the athletes' performance even more difficult.** This stage is preparation for a high level competition where the athletes demonstrate a high level of movement performance. All exercises **are goal oriented and strongly related to their sport discipline**, but there is also the added element of an unpredictable environment or high cognitive load.

In all levels we must take into consideration the steps and the following contents such as:

1. **Space** (human levels an axis),
2. **Time** (tempo – frequency/speed of movement, rhythm – timing of successive movements, timing – at the right time in the right place),
3. **Adapting the availability and reliability of sensory input** (interoception/exteroception),
4. **Cognitive complexity in connection with the realization of a goal-oriented movement task** (e.g. less time for the realization of a movement response, maintaining attention on the goal

despite disturbing factors, recognition of a wrong movement, making a quick decision based on the current situations.

PRESENTATION OF EXERCISES

In sports, the theory of **variability across three levels of motor skill development** outlines the progression from simple exercises to highly complex, integrated movements involving external objects. This approach is particularly useful for coaches, as it provides a structured method for building motor skills in a way that enhances coordination and adaptability.
In this textbook the 3 stages model is demonstrated on gymnastics which is considered a base of motor skill learning and could be applied as a supplement of training processes in various sports activities with principles of experience less to more complex movements.

LEVEL 1: BASIC EXERCISES – LESS COMPLEX

The first level focuses on **basic exercises** that are less complex and emphasise foundational motor skills. At this stage, athletes work on core movements that build stability, balance, coordination, and strength. Basic exercises typically include simple movements such as squats, lunges, planks, and basic rolls or cartwheels. These exercises do not require complex coordination or high levels of spatial awareness but rather emphasise body control, fundamental muscle engagement and proper alignment.
In gymnastics, for example, a first-level exercise might be a **forward roll** or **basic balance hold** on a beam. These movements allow learners to gain confidence in controlling their bodies and understanding their movements. Similarly, in other sports, this stage could include the involvement of gymnastic exercises that boost and upgrade motor skills development enabling a better performance of agility, in grassroots sports like football, handball and basketball.
The key goal is to build a strong foundation, ensuring that each athlete has control over their movements and can perform them with stability and accuracy before progressing.

LEVEL 2: INCREASED COMPLEXITY

The second level of motor skill development increases the **complexity of exercises** by introducing elements that require more coordination, timing, and spatial awareness. At this stage, exercises become more demanding, combining various movement patterns and requiring the athlete to adjust their body in response to more dynamic challenges.
In gymnastics, the second level might involve movements such as **handstands, back rolls, or transition sequences on apparatuses** like the uneven bars or rings. These exercises demand higher levels of strength and flexibility, as well as greater control over body movement. Practicing these more complex skills also begins to enhance proprioception (the body's awareness of itself in space), which is essential for executing advanced gymnastics moves and maintaining balance.
In sports such as soccer, handball, and basketball, this level will boost **passing, dribbling, or shooting with opposition or under time constraints**. Athletes can combine the process of gymnastic exercises of handling more dynamic challenges while maintaining control and coordination. For instance, a basketball player can combine a basic motor skill training with practice dribbling around defenders or a football player may engage in passing drills with teammates moving in various directions. This level

builds the ability to handle more demanding situations, preparing the athlete for real game environments.

LEVEL 3: COMBINING EXERCISES WITH EXTERNAL DISTRACTIONS

The third level of variability in motor skill development involves combining learned movements with the additional complexity of handling an **external object**, specifically, a ball in sports like football, handball, and basketball. This is where motor skills are tested at their highest level, as athletes must maintain coordination, balance, and control while also managing a separate object that moves independently of their body.
In gymnastics, the **third level of motor skill variability** focuses on combining complex body movements and transitions across different apparatuses, emphasizing coordination, strength, and control under challenging conditions. At this level, gymnasts are required to perform **advanced skills on multiple apparatuses** such as the bars, beam, vault, or floor, often linking skills together in dynamic sequences. In sports, this level might involve **dribbling a ball in soccer while evading defenders, shooting in handball with defensive pressure, or performing complex passing plays in basketball**. Each skill combines prior movements with the challenge of tracking, controlling, and using a ball, often while adapting to an unpredictable, fast-paced environment. This level emphasizes **multi-tasking, quick decision-making, and adaptability**, skills essential for high-level performance in team sports.

The progression through these three levels of motor skill variability teaches athletes to **build a foundation of simple skills, progress to more complex body movements, and eventually integrate external objects and more unpredictable conditions**. For coaches, understanding this progression helps them design effective training programs that scaffold skills appropriately, enabling athletes to achieve mastery over both their bodies and any external objects they may interact with in their sport. This structured approach develops not only physical capabilities but also mental focus, adaptability, and spatial awareness, which are essential for success in gymnastics and other sports.

INTERACTIVE PART FOR PRACTICAL APPLICATION

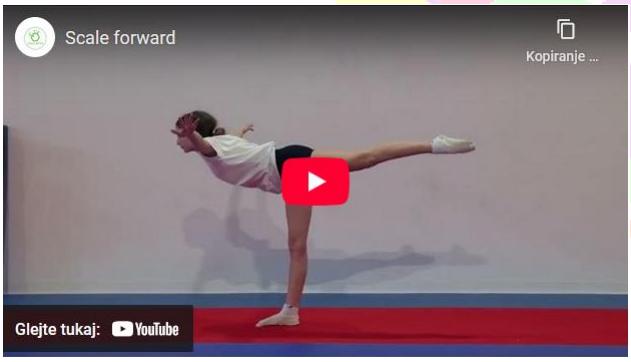
STANDINGS

First level of variability

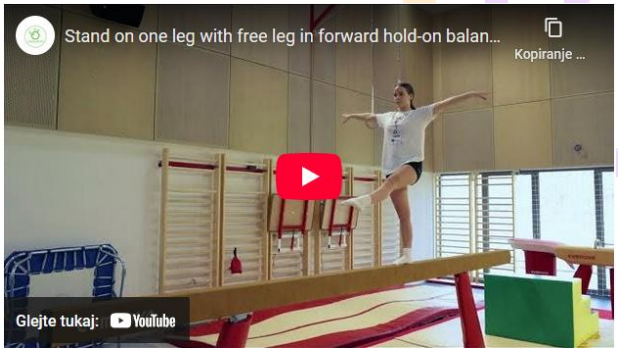
	**Stand on one leg with free leg in forward hold** • **Starting Position:** Stand on one leg with the other leg extended forward low, arms spread out. • **Movement:** Lift the front leg up to a high forward position. • **Final position:** Stand on one leg, front leg lifted high with either the left or the right leg.
	**Stand on one leg with free leg in backward hold** • **Starting Position:** Stand on both feet, hands on hips. • **Movement:** Extend one leg backward and lift it. • **Final Position:** Stand on one leg, back leg extended with either the left or right leg, hands on hips.
	**Stand on one leg with free leg in backward hold** • **Starting Position:** Stand on both feet, hands on hips. • **Movement:** Extend one leg backward and lift it. • **Final Position:** Stand on one leg, back leg extended with either the left or right leg, hands on hips.

	**Stand on one leg with free leg in side extension** • **Starting Position:** Stand on both feet, hands on hips. • **Movement:** Extend either the left or the right leg to the side. • **Final Position:** Stand on one leg, side leg extended with either the left or right leg.

Second level of variability

	**Scale forward** • **Starting Position:** Stand on both feet, arms extended out. • **Movement**: Extend and lift one leg backward as high as possible, while lowering the torso to a horizontal position, gaze forward, head slightly tilted back, arms spread. • **Final Position:** Balance on one leg, with the other leg extended back, arms spread outward.
	**Stand on one leg with free leg in high side extension** • **Starting Position:** Stand on both feet, arms extended out. • **Movement:** Stand on one leg, bend the other and lift it sideways, holding it by the heel, then slowly extend the leg fully. • **Final position:** Stand on one leg with a high side leg extension.

Third level of variability

	**Stand on one leg with the free leg bent forward-on balance beam** • **Movement:** Lift the front leg to a high forward position, and then bend it, placing the foot at knee level. • **Final position:** Stand on one leg, with the forward leg bent, foot at knee, hands on hips.
	**Stand on one leg with free leg in side extension-on balance beam** • **Movement:** Extend either the left or the right leg to the side. • **Final position:** Stand on one leg, side leg extended with either the left or right leg.
	**Stand on one leg with free leg in backward hold-on balance beam** • **Movement:** Extend one leg backward and lift it. • **Final position:** Stand on one leg, back leg extended with either the left or right leg, hands on hips.
	**Stand on one leg with free leg in forward hold-on balance beam** • **Starting Position:** Stand on one leg with the other leg extended forward low, arms spread out. • **Movement:** Lift the front leg up to a high forward position. • **Final Position:** Stand on one leg, front leg lifted high with either the left or the right leg.

	**Scale forward-using gymnastic equipment bench, low beam, high beam** • **Starting Position:** Stand on both feet, arms extended out. • **Movement:** Extend and lift one leg backward as high as possible, while lowering the torso to a horizontal position, gaze forward, head slightly tilted back, arms spread. • **Final Position**: Balance on one leg, with the other leg extended back, arms spread outward, palms down.
	**Stand on one leg with free leg in high side extension (using bench, low beam, high beam)** • **Starting Position:** Stand on both feet, arms extended out. • **Movement:** Extend and lift one leg backward as high as possible, while lowering the torso to a horizontal position, gaze forward, head slightly tilted back, arms spread. • **Final Position:** Balance on one leg, with the other leg extended back, arms spread outward, palms down.

SHOULDER STANDINGS

First level of variability

	**Shoulder stand-with assistance** • **Starting Position**: Sitting. • **Assistance**: Hold the feet, assist in lifting the legs above the head, support the lower back with the other hand, assist in achieving the final position. • **Movement**: From a sitting position, roll onto the back while simultaneously lifting the legs and hips as high as possible, using hands to support the lower back. • **Final Position**: Shoulder stand.
	**Shoulder stand** • **Starting Position**: Sitting. • **Movement**: From a sitting position, roll onto the back while simultaneously lifting the legs and hips as high as possible, using hands to support the lower back. • **Final Position**: Shoulder stand

Second level of variability

	**Shoulder stand with hand support on the floor** • **Starting Position**: Sitting. • **Movement:** From a sitting position, roll onto the back while simultaneously lifting the legs and hips as high as possible, with arms stretched back for support. • **Final Position:** Shoulder stand with hand support on the floor.

	**Leg movements in shoulder stand** • **Starting Position**: Shoulder stand. • **Movements**: a. Scissoring legs; b. Moving legs apart and together; c. Lowering legs to lying on the back, with legs spread apart and touching the floor; d. Lowering legs to lying on the back, with legs together and touching the floor.

Third level of variability

	**Shoulder stand (using gymnastic equipment: Bench, low beam, high beam)** • **Starting Position**: Lying on the back, arms extended overhead, elbows bent, holding the beam from below, with elbows pressed close to the ears. • **Movement**: Simultaneously lift the legs and hips as high as possible into a shoulder stand, with elbows pressing tightly against the head. • **Final Position**: Shoulder stand with arm support behind the head Assistance Support the lower back

FORWARD ROLL

First level of variability

	**Forward roll-rocking on the back** • **Starting position**: Lying on the back, knees bent, hands clasped under the knees. • **Movement**: Rocking back and forth.
	**Forward roll-Transition from rocking on the back to standing on feet** • **Starting position**: Lying on the back, knees bent, hands under the knees. • **Movement**: Rocking on the back, moving forward to a squat position on the whole feet, straightening up.
	**Stand on one leg with free leg in back hold** • **Starting Position**: Stand on both feet, hands on hips. • **Movement**: Extend one leg backward and lift it. • **Final Position**: Stand on one leg, back leg extended with either the left or right leg, hands on hips.
	**Forward roll down a slope** • **Starting Position**: Squat support position at the start of the slope. • **Movement**: Transition from the squat support, followed by a push with the legs. Raise the hips high, tuck the head, and softly lower the hands to the neck and shoulders, rolling on the curved back to a squat position. Straighten up. • **Final Position**: Standing.

	• **Assistance:** We kneel beside the person, tuck one of their arms under their head for safety, guide the other arm across the hips and over the head, and assist them in rolling forward over the neck and shoulders.

Second level of variability

	**Forward roll** • **Starting Position**: Squat support position in front. • **Movement**: Transition from the squat support, followed by a push with the legs. Raise the hips high, tuck the head, and softly lower onto the neck and shoulders, rolling on the curved back to a squat. Straighten up. • **Final Position**: Standing • **Assistance:** Kneel beside, tuck their arm under head, guide other arm over, support hips, gently assist roll over neck and shoulders.
	**Forward roll with strudlle support** • **Starting Position**: Squat support position in front. • **Movement**: Transition from the squat support, followed by a push with the legs. Raise the hips high, tuck the head, and softly lower onto the neck and shoulders, rolling on the curved back with legs apart, into a straddle support position. End in a straddle standing position. • **Final Position**: Straddle standing position

	**Forward roll with strudlle support-frontal view** • **Starting Position**: Squat support position in front. • **Movement**: Transition from the squat support, followed by a push with the legs. Raise the hips high, tuck the head, and softly lower onto the neck and shoulders, rolling on the curved back with legs apart, into a straddle support position. End in a straddle standing position. • **Final Position**: Straddle standing position
	**Connected forward rolls** • **Starting Position**: Squat support position in front. • **Movement**: Transition from the squat support, followed by a push with the legs. Raise the hips high, tuck the head, and softly lower onto the neck and shoulders, rolling on the curved back to a squat. Repeat the movement. • **Final Position:** Standing

Third level of variability

	**Forward roll without hands** • **Starting Position:** Squat support position in front. • **Movement**: Transition from the squat support, followed by a push with the legs. Raise the hips high, tuck the head, spread the arms, then slowly lower onto the neck and shoulders, rolling on the curved back to a squat. Straighten up.

	• **Final Position**: Standing
	**Forward roll onto the vaulting box** • **Starting Position**: Standing • **Movement**: Run-up, a two-footed push from the springboard with hands supported on the chest, raising the hips high, tucking the head, and softly lowering onto the neck and shoulders, rolling on the curved back to a squat. Straighten up. • **Final Position**: Standing • **Assistance:** Stand beside, guide jumper's hands to box, support at hips and back, assist smooth roll over shoulders onto vaulting box.
	**Hecht roll** • **Starting Position:** Standing. • **Movement**: Run-up, performing a two-footed jump and simultaneous swing to forward arm position. At the highest point of the jump, slightly bend forward, head slightly tilted back, looking toward the ground for hand placement. After hand contact with the ground, bend the arms, tuck the head, cushion the descent onto the back of the head, and roll onto the back to a squat. Straighten up. • **Final Position:** Standing

Forward roll on gymnastic equipment: low beam, high beam

- **Starting Position**: Squat support position in front.
- **Movement**: Transition from the squat support, followed by a push with the legs. Raise the hips high, tuck the head, and softly lower onto the neck and shoulders, reposition hands below the beam, and roll with a curved back to straddle support and then to sitting straddle.
- **Final Position:** Seated straddle support position in front.

Forward roll in stradlle on gymnastic beam

- **Starting Position:** Squat support position in front.
- **Movement**: Transition from the squat support, followed by a push with the legs. Raise the hips high, tuck the head, and softly lower onto the neck and shoulders, rolling on the curved back to a squat. Straighten up.
- **Final Position**: Standing.
- **Assistance:** Stand beside beam, guide hands to beam, support at hips, stabilize legs in straddle, assist controlled roll over shoulders safely.

Somersault

- **Movement:** Approach and two-footed take-off from a mini trampoline. During the jump, tuck the head, swing the arms, and bring the upper body closer to the knees, keeping the body as compact as possible. After passing through the vertical position, begin

	to open the body in preparation for landing. • **Final Position:** Land by slightly bending the knees to absorb the impact. • **Assistance:** Guide the movement with a push on the thighs, support the rotation, and ensure a safe landing.

BACKWARD ROLL

First level of variability

	**Rolling on the back with correct hand position for backward roll** • **Starting position:** Sitting with bent knees, arms bent, palms parallel to the shoulders. • **Movement:** Swaying backward and forward.
	**Backward roll down a slope** • **Starting Position:** Sitting at the edge of the slope, back arched, arms bent, palms parallel to the shoulders. • **Movement:** from sit roll backward over the back in a curled position with the head tucked in. Bend the arms and place palms next to the ears on the ground. Use the arms to help transition the legs and body over the head to a squat position. Stand up. • **Final Position:** Standing with feet together. • **Assistance:** We follow the movement and help the child transfer over the head to relieve pressure from the neck.
	**Stand on one leg with free leg in backwardhold** • **Starting Position:** Stand on both feet, hands on hips. • **Movement:** Extend one leg backward and lift it. • **Final Position:** Stand on one leg, back leg extended with either the left or right leg, hands on hips.

Second level of variability

	**Backward roll** • **Starting Position**: Squatting on whole feet, arms bent, palms parallel to the shoulders, back arched, head tucked in. • **Movement**: From a squat, sit on the floor close to the heels, then in a tucked position with the head down, roll backward over the back, bend the arms, and place the palms near the ears on the floor. Use the arms to transition the legs and body over the head to squat support. Stand up. • **Final Position**: Standing with feet together. • **Assistance:** Assist by guiding hips over the head, support the back, ensure chin is tucked, and help control smooth landing.
	**Backward roll to front straddle support** • **Starting Position:** Squatting on whole feet, arms bent, palms parallel to the shoulders, back arched, head tucked in. • **Movement:** From a squat, sit on the floor close to the heels, then in a tucked position with the head down, roll backward over the back, bend the arms, and place the palms near the ears on the floor. Spread the legs apart, use the arms to transition the legs and body over the head. End in a straddled front support. • **Final Position:** Standing with legs apart, arms raised.

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<tr>
<td> 
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<td>Backward roll to front support with legs together

• Starting Position: Squatting on whole feet, arms bent, palms parallel to the shoulders, back arched, head tucked in.
• Movement: From a squat, sit on the floor close to the heels, then in a tucked position with the head down and legs straight, roll backward over the back, bend the arms, and place the palms near the ears on the floor. Use the arms to help transition the legs and body over the head to a standing front support.
• Final Position: Standing with feet together, arms raised.</td>
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<tr>
<td> 
</td>
<td>Connected backward rolls

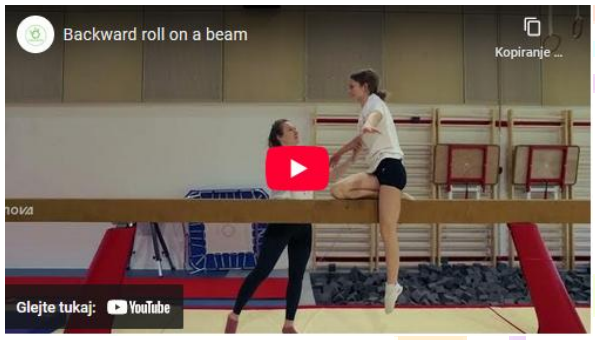
• Starting Position: Squatting on whole feet, arms bent, palms parallel to the shoulders, back arched, head tucked in.
• Movement: From a squat, sit on the floor close to the heels, then in a tucked position with the head down and legs straight, roll backward over the back, bend the arms, and place the palms near the ears on the floor. Use the arms to help transition the legs and body over the head to a squat support. Repeat the movement several times.
• Final Position: Squat support.</td>
</tr>
</table>

Third level of variability

	**Backward roll to front support** • **Starting Position:** Squatting on whole feet, arms bent, palms parallel to the shoulders, back arched, head tucked in. • **Movement**: From a squat, sit on the floor close to the heels, then in a tucked position with the head down and legs straight, roll backward over the back, bend the arms, and place the palms near the ears on the floor. Use the arms to help transition the legs and body over the head to a front support. • **Final Position:** Front support
	**Backward roll to handstand-with assistance** • **Starting Position:** Squatting on whole feet, arms bent, palms parallel to the shoulders, back arched, head tucked in. • **Movement**: From a squat, sit on the floor close to the heels, then in a tucked position with the head down and legs straight, roll backward over the back, bend the arms, and place the palms near the ears on the floor. Use the arms to help transition the legs and body over the head to a handstand. • **Final position:** Handstand. • **Assistance:** We follow the movement, hold the feet, and help the person rise into a standing position

Backward roll to handstand

- **Starting Position:** Squatting on whole feet, arms bent, palms parallel to the shoulders, back arched, head tucked in.
- **Movement:** From a squat, sit on the floor close to the heels, then in a tucked position with the head down and legs straight, roll backward over the back, bend the arms, and place the palms near the ears on the floor. Use the arms to help transition the legs and body over the head to a handstand.
- **Final Position:** Handstand.

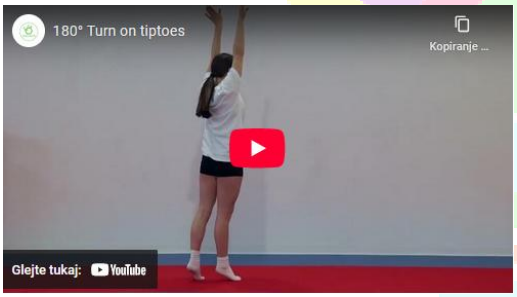
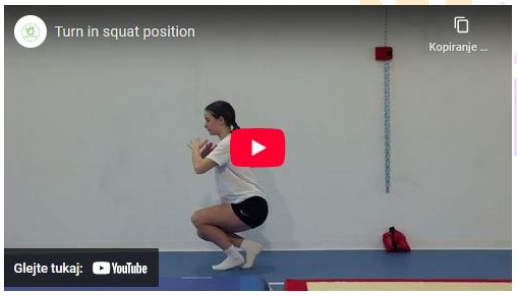


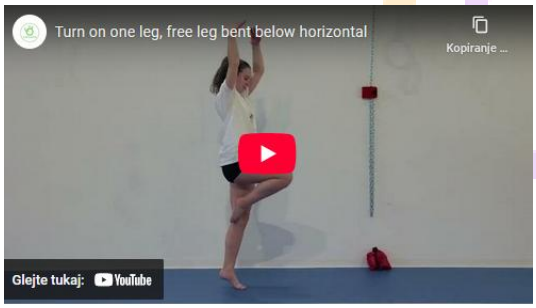
Backward roll on a beam

- **Starting Position:** Lying on the back, arms extended, elbows bent, holding the beam from underneath, pressing elbows close to the ears.
- **Movement**: From lying on the back, use the arms to roll backward over the back and head to a kneeling seat on one leg, with the other leg extended along the beam.
- **Final Position:** Kneeling seat on one leg, with the other leg extended along the beam.

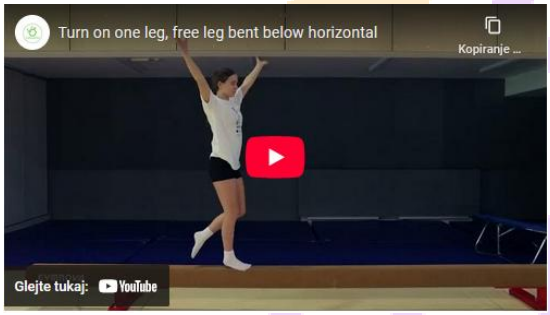
ROTATIONS AROUND THE LONGITUDINAL AXIS

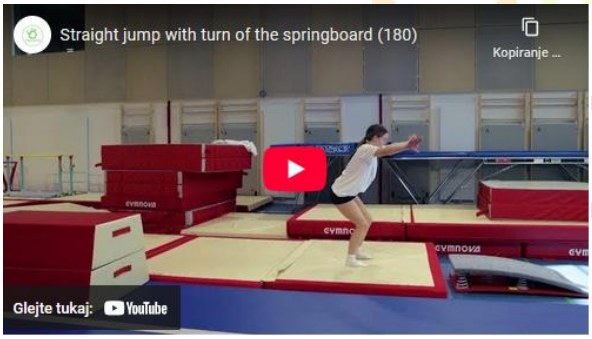
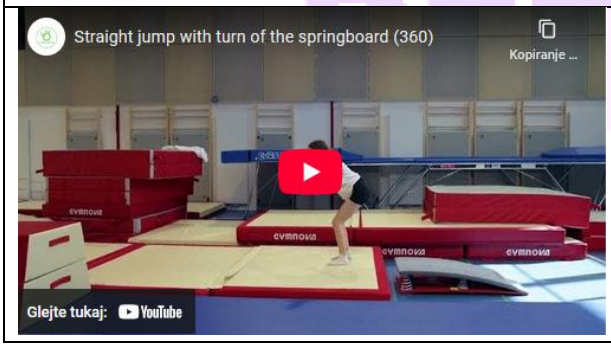
First level of variability

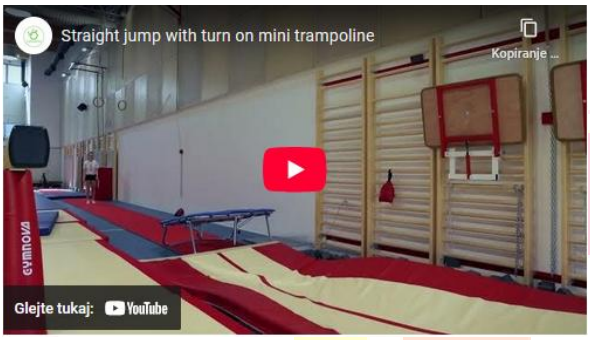
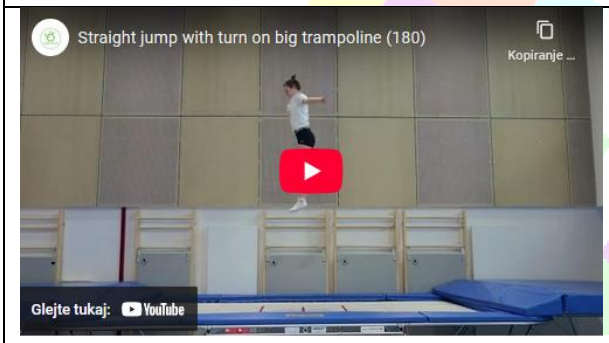
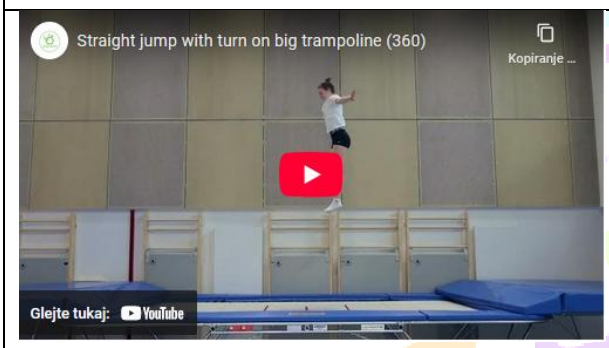
	**Rolling** • **Starting Position:** Lying on the back, arms extended upward. • **Movement**: Rolling around the longitudinal axis.
	**180° Turn on tiptoes** • **Starting Position**: Standing with feet in line, arms extended sideways. • **Movement:** From the standing position with one foot placed just in front of the other, rise onto the tiptoes, raise the arms, and turn 180°. When the turn is complete, lower back onto flat feet and extend arms to the sides. • **Final Position:** Staggered stance, arms extended sideways.
	**Turn in squat position** • **Starting Position:** Standing with feet in line, arms extended sideways. • **Movement:** From the standing position with one foot in front of the other, rise onto the toes, then squat down with arms bent forward. Complete a 180° turn. Once finished, stand up, place feet flat, and extend arms to the sides. • **Final Position:** Standing with feet in line, arms extended sideways.

	**Straight jump with 180° turn** • **Starting Position:** Standing with feet in line, arms extended sideways. • **Movement:** Begin from standing, low the centre of the body with arms backward. Jump high into the air, bringing the arms forward and upward. Rotate 180° in the air and land using a flexing of the knees to reduce an impact on the joints. • **Final Position:** Standing with arms forward.
	**Straight jump with 360° turn** • **Starting Position:** Standing with feet in line, arms extended sideways. • **Movement:** Begin from standing, low the centre of the body with arms backward. Jump high into the air, bringing the arms forward and upward. Rotate 360° in the air and land using a flexing of the knees to reduce an impact on the joints. • **Final Position:** standing, arms forward.
	**Turn on one leg, free leg bent below horizontal** • **Starting Position**: Stand on one leg with the other raised in front, one arm extended sideways, the other bent forward. • **Movement:** Transfer weight onto the front part of the standing foot, raise the arms, bend the lifted leg in front with the foot near the knee, and rotate 180°. Upon completing the turn, place the foot on the flat and return the extended leg forward, arms to the sides. • **Final Position:** Stand on one leg, the other leg is extended forward arms sideways.

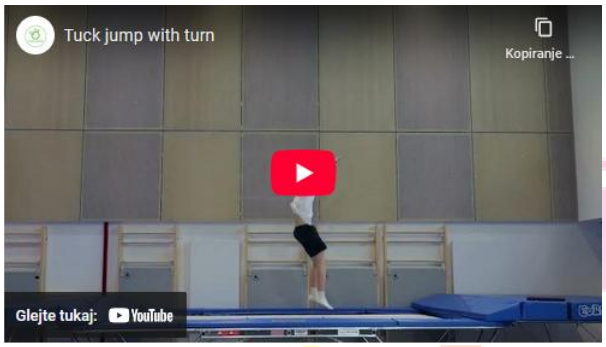
Second level of variability

	**180° turn on tiptoes (on gymnastic equipment)** • **Starting Position:** Standing with feet in line, arms extended sideways. • **Movement:** From standing with one foot in front of the other, rise onto the toes, raise the arms, and complete a 180° turn. After the turn, return to flat feet and extend arms sideways. • **Final Position:** Standing on feet in line.
	**Turn in squat (on gymnastic equipment)** • **Starting Position**: Standing with feet in line, arms extended sideways. • **Movement:** From standing with one foot in front of the other, rise onto the toes, squat, and bring arms forward. Complete a 180° turn. Stand up, place feet flat, and extend arms to the sides. • **Final Position**: Standing with feet in line, arms extended sideways
	**Turn on one leg, free leg bent below horizontal (on gymnastic equipment)** • **Starting Position:** Stand on one leg with the other extended forward, one arm sideways, the other bent forward. • **Movement:** Shift weight onto the front foot, raise arms, and turn the raised leg in front with the foot near the knee for a 180° turn. After the turn, place the foot down and extend the arms sideways. • **Final Position:** Stand on one leg, the other leg is extended forward arms sideways.

	**Straight jump with turn from vaulting box (180)** • **Starting Position:** Standing with feet in line, arms sideways. • **Movement:** Lower into a half-squat, jump from the vaulting box with arms moving through to a 180° turn in the air, and landing using a flexing of the knees to reduce an impact on the joints and muscles. • **Final Position:** Standing, arms forward.
	**Straight jump with turn from vaulting box (360)** • **Starting Position:** Standing with feet in line, arms sideways. • **Movement**: Lower into a half-squat, jump from the vaulting box with arms moving through to a 180° turn in the air, and landing using a flexing of the knees to reduce an impact on the joints and muscles. • **Final Position**: Standing, arms forward.
	**Straight jump with turn of the springboard (180)** • **Movement**: Run up, jump off the springboard with legs together, and rotate, landing using a flexing of the knees to reduce an impact on the joints. • **Final Position**: Standing, arms forward.
	**Straight jump with turn of the springboard (360)** • **Movement**: Run up, jump off the springboard with legs together, and rotate, landing using a flexing of the knees to reduce an impact on the joints.

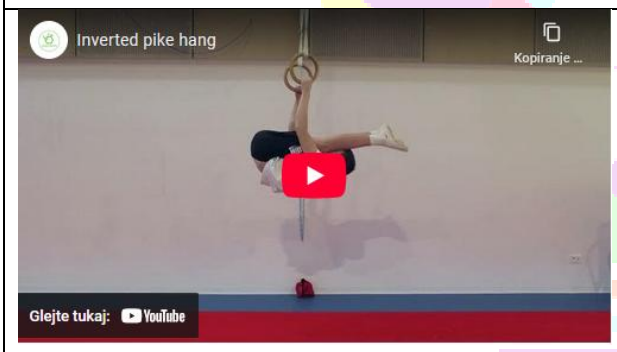
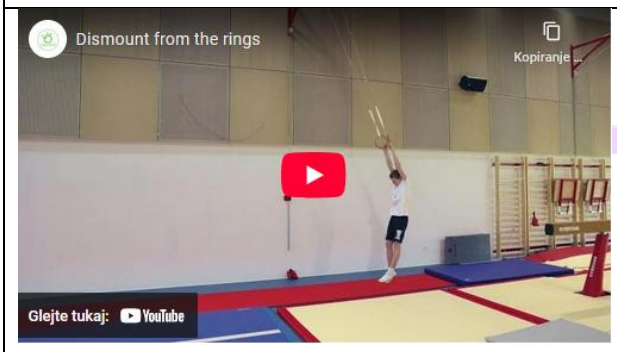
	• **Final Position:** Standing, arms forward.
	**Straight jump with turn on mini trampoline** • **Movement**: Run up, jump from the mini trampoline with legs together, rotate, and land in a half-squat with arms forward. • **Final Position:** land using a flexing of the knees to reduce an impact on the joints arms forward.
	**Straight jump with turn on big trampoline (180)** • **Movement:** Perform straight jumps on the trampoline, raise arms through to overhead to complete the turn.
	**Straight jump with turn on big trampoline (360)** • **Movement:** Perform straight jumps on the trampoline, raise arms through to overhead to complete the turn.

Third level of variability

	**Tuck jump with turn** • **Movement**: Run up, jump from the big trampoline, tuck the knees, then straighten the legs, rotate, and land using a flexing of the knees to reduce an impact on the joints. • **Final Position:** Standing, arms forward.
	**Tuck jump with turn from mini trampoline** • **Movement:** Run up, jump from the mini trampoline, tuck the knees, then straighten the legs, rotate, and land using a flexing of the knees to reduce an impact on the joints. • **Final Position:** Standing, arms forward.
	**Handstand turn** • **Starting Position:** Stand on one leg, other leg raised forward, arms overhead. • **Movement**: Step forward with the raised leg, place hands on the ground, swing the supporting leg to handstand, and turn 180°. Lower the first leg back to the ground, followed by the other leg. • **Final Position:** Stand on one leg, other leg raised forward, arms overhead.

ELEMENTS ON GYMNASTIC RINGS

First level of variability

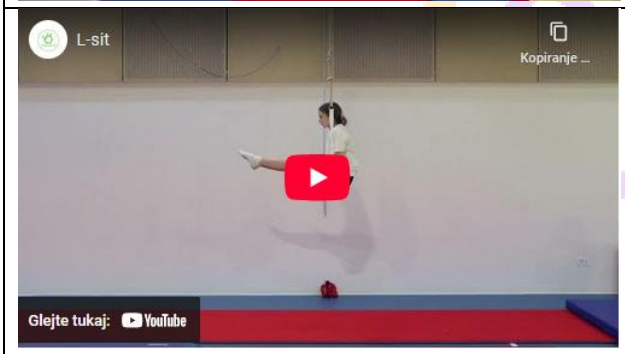
	**Swinging** • **Starting Position:** Hanging in standing support. • **Movement:** Step forward into the forward swing, step back into the backswing, and repeat the movement.
	**Inverted pike hang** • **Starting Position:** Hanging in standing support. • **Movement:** Pull up from hanging in standing support to inverted pike hang. • **Final Position:** inverted pike hang.
	**Inverted hang** • **Starting Position**: High hanging support. • **Movement**: Extend the hips from inverted pike hang support to the inverted hang. • **Final Position:** Inverted hang.
	**Dismount from the rings** • **Movement**: From the swinging motion, release in the backswing and land on the mat. • **Final Position:** land using a flexing of the knees to reduce an impact on the joints arms forward.

Second level of variability

	**Inverted pike hang during swinging** • **Movement**: During swinging forward, pull up from hanging to inverted pike hang.
	**Inverted hang during swinging** • **Movement:** During swinging in inverted pike hang move the legs into straight position to inverted hang.
	**180° turn in hang during forward swing** • **Movement**: During swinging, perform a 180° turn at the highest point of the forward swing.
	**Skin the cat** • **Starting Position:** Hang from the ring, arsm fully extended (easy version: standing). • **Movement**: pull your knees towards your chest, tucking the body and lift your legs over the ring while rotating your body backward, continue rotating your body until your legs pass under the rings moving into the deep

	shoulder stretch. then reverse the motion by pulling your legs back up and over, bringing yourself back to original hanging position. • **Final Position**: Hanging or standing support. • **Asistance:** We follow the movement, hold the hips, and assist them forward.

Third level of variability

	**Handstand support** • **Final Position:** Suport in standing arms position with legs down
	**Handstand support with bended knees** • **Final Position:** Maintain support with straight arms while the legs hang down. From this position, bend the knees in a controlled and correct manner.
	**L-Position** • **Starting Position:** standing arms support. • **Movement:** Raise the legs to a horizontal position • **Final Position**: L-sit.

CARTWHEEL

First level of variability

	**Cartwheel-Support on a block** • **Starting Position:** Standing support (hands on the stool, feet on the floor). • **Movement:** Hopping from one leg to the other.
	**Cartwheel-Jumping over an obstacle** • **Starting Position:** Front support position. • **Movement:** Jumping over the obstacle from one leg to the other.

Second level of variability

	**Cartwheel** • **Starting Position:** Straddle standing position, arms outstretched. • **Movement**: From the straddle position, take a long step and lower the center of gravity, leaning to the left or right. Place hands on the ground while swinging the leading leg sideways and upward into a straddle handstand. Push off with one hand to shift weight to the other hand and place the foot on the ground, followed by a weight transfer to a standing straddle position. • **Final Position**: Straddle standing position, arms outstretched. • **Assistance:** We stand behind them, hold them by the waist, and help perform the movement

	* To increase the **level of difficulty,** we can perform the cartwheel on the opposite side.
	**Connected-cartwheels** • **Starting Position:** Straddle standing position, arms outstretched. • **Movement:** Same as a single cartwheel but repeated in sequence to connect multiple cartwheels. • **Final Position:** Straddle standing position, arms outstretched.

Third level of variability

	**One-handed cartwheel** • **Starting Position:** Forward standing position, arms raised. • **Movement**: From the forward leg stance, take a long step, place one hand on the ground while the other arm swings alongside the body into a one-handed handstand. Place the leg on the ground and transfer weight to the other leg. • **Final Position:** Forward standing position, arms raised.
	**Cartwheel with a 90° Inward Turn** • **Starting position:** standing with feet together, arms raised overhead. • **Movement:** from the standing position, perform a small jump into a forward lunge, arms remain raised overhead while lowering the center of gravity. With a 90° inward turn, place the hands on the ground, simultaneously swinging the leading leg sideways and upward. During the transition into a handstand, the leading leg catches up with the other leg. Shift the weight to

	the opposite hand and complete the 90° turn, followed by a jump. • **Final position:** half-squat with feet together, arms extended forward.
	**Cartwheel with a 90° Inward Turn from a Low Beam** • **Starting position:** standing with feet together, arms raised overhead. • **Movement:** from the standing position, perform a small jump into a forward lunge, arms remain raised overhead while lowering the center of gravity. With a 90° inward turn, place the hands on the ground, simultaneously swinging the leading leg sideways and upward. During the transition into a handstand, the leading leg catches up with the other leg. Shift the weight to the opposite hand and complete the 90° turn, followed by a jump. • **Final position:** half-squat with feet together, arms extended forward. • **Assistance:** The practitioner is held by the hips to support the execution of the movement.
	**Cartwheel with a 90° Inward Turn from a High Beam** • **Starting position:** standing with feet together, arms raised overhead. • **Movement:** from the standing position, perform a small jump into a forward lunge, arms remain raised while lowering the center of gravity. With a 90° inward turn, place the hands on the beam, simultaneously swinging the leading leg sideways and upward. During the transition into a handstand, the leading leg catches up with the other leg. Shift the weight to the opposite hand and complete the 90° turn, followed by a jump.

	• **Final position:** half-squat with feet together, arms extended forward.
	**Connected Round-Off** • **Starting Position**: Standing feet together, arms raised. • **Movement:** Jump forward into a lunge, arms raised, lower the center of gravity, and turn 90 degrees. Place hands on the ground while swinging the leading leg sideways and upward. During the handstand, the leading leg meets the second leg. Shift weight to the other hand, turn 90 degrees, then perform a jump with a 180-degree turn and repeat the movement. • **Final Position:** Landing using a flexing of the knees to reduce an impact on the joints arms forward
	**Cartwheel on a bench/beam** • **Starting Position:** Forward standing position, arms raised. • **Movement:** From the forward stance, take a long step, lower the center of gravity, and turn 90 degrees. Place hands on the bench or beam while swinging the leading leg sideways and upward into a straddle handstand. Push off with one hand to transfer weight to the other hand, place the foot on the ground, transfer weight, turn 90 degrees, and return to the starting stance. • **Final Position:** Forward standing position, arms raised.

ELEMENTS ON THE PARALLEL BARS

First level of variability

	**L-sit with bend legs** • **Starting Position:** Support on hands • **Movement:** Lifting bent legs to a horizontal position • **Final Position:** L-sit
	**Turn** • **Starting Position:** Seated behind with legs straddled. • **Movement:** From a seated position behind with legs straddled, turn 90° and shift to one rail, seated behind with legs together, continue turning 90° to return to a seated position behind with legs straddled. • **Final Position:** Seated behind with legs straddled
	**Back dive – dismount with a back dive** • **Starting Position:** Back arms support. • **Movement:** From swinging reaching the highest position on backward jump in to one side. • **Final Position:** Landing using a flexing of the knees to reduce an impact on the joints arms forward

	**Swing in support** • **Starting Position**: Support on hands • **Movement:** Transition from forward swing to backward swing

Second level of variability

	**L-sit** • **Starting Position:** Support on hands. • **Movement:** Lifting straight legs to a horizontal position. • **Final Position:** Support on hands, straight legs in a horizontal position.
	**Swing on upper arm** • **Starting Position:** Support on upper arm. • **Movement:** Transition from forward swing to backward swing.

Third level of variability

	**Forward roll** • **Starting Position:** Front support with legs straddled. • **Movement:** Forward roll on upper arms. • **Final Position:** Back arms support with legs straddled.

ELEMENTS ON THE UNEVEN BARS OR HIGH BAR

First level of variability

	**Hand walking** • **Starting Position:** Hang • **Movement:** Move left and right along the bar by shifting hand positions
	**Hand walking in mixed grip hang** • **Starting Position**: Hands in opposite overhand grips, legs hooked on the bar at ankles or knees. • **Movement:** Move forward and backward along the bar using legs and arms. After completing the movement, transition to a front hang and dismount onto the mat.
	**Hand walking on high bar** • **Starting Position:** Hang. • **Movement:** Move left and right along the bar by shifting hand positions. • **Assistance:** An adult supports and lifts the pupil up to reach and grasp the bar securely for hanging.

	**Hanging under the knees** • **Starting Position**: Stand support behind the bar, wide overhand grip. • **Movement:** From stand support, lift the hips and push the legs between the arms to a suspended hang under the bar and then over, positioning the bar under the knees. • **Final Position:** Hang under the knees
	**Skin the cat** • **Starting Position:** Stand support behind the bar, wide overhand grip. • **Movement:** From stand support, lift the hips and push the legs between the arms to a suspended hang under the bar, then over the head to a back hang. • **Final Position:** Back hang
	**Dismount** • **Starting Position:** Front support, overhand grip. • **Movement:** From front support, swing legs backward to dismount. • **Final Position:** Landing using a flexing of the knees to reduce an impact on the joints arms forward.

	**Forward roll** • **Starting Position**: Front support, overhand grip. • **Movement:** From front support, rotate forward along the bar with hips against the bar. • **Final Position:** Stand hang.
	**Front pull-up with inclined support** • **Gymnastic Equipment:** Multi-purpose mat/springboard. • **Starting Position:** Stand hang, arms bent at shoulder width, overhand grip. • **Movement:** From stand hang, run up the incline, lift hips and swing upward. Rotate with extended legs over the bar, lift the head and extend the arms to lift the torso into front support. • **Final Position:** Front support

Second level of variability

	**Swing in hang** • **Starting Position:** Front hang. • **Movement:** In the backswing, the body is slightly arched. The movement transitions through shoulders, hips, and finally feet to reach a vertical position. After passing vertical, the feet, hips, and shoulders lead into a forward swing, again slightly arched. Reverse the order for backward swing.

Pullover

● Starting Position: Stand hang, arms bent at shoulder width, overhand grip
● Movement: From stand hang, swing with on leg, lift hips and swing upward. Rotate with extended legs over the bar, lift the head and extend the arms to lift the torso into front support
● Final Position: Front support

Hip circle backward

- **Starting Position**: Front support, overhand grip.
- **Movement:** From front support, swing the legs backward to lift hips away from the bar, maintaining shoulders above the apparatus. Then, swing forward with the shoulders and hips close to the bar, rotating the body to a straight position around the bar into front support.
- **Final Position**: Front support, overhand grip

Forward Circle in Straddle Support

- **Starting position:** straddle support, underhand (forked) grip.
- **Movement:** from the straddle support, lift the hips and begin to fall forward. During the fall, simultaneously make a strong swing with the leading leg forward. As you reach an inverted position, bring the leading leg together with the trailing leg, and during the upward phase, arch the body slightly to facilitate returning to the straddle support.
- **Final position:** straddle support, underhand (forked) grip.

Third level of variability

	**Hang under the knees on high bar** • **Starting Position:** Stand support behind the bar, wide overhand grip. • **Movement**: From stand support, lift hips and push legs between arms to a suspended hang under the bar and then over, positioning the bar under the knees. • **Final Position:** Hang under the knees. • **Assistance**: Support lower back, guide legs, ensure firm grip, supervise closely throughout.
	**Forward roll on high bar** • **Starting Position:** Front support, overhand grip. • **Movement**: From front support, rotate forward with hips against the bar into a hang • **Final Position**: Stand hang
	**Pull-over on high bar** • **Starting Position:** Hang. • **Movement:** From hang, lift legs forward and hips close to the bar, then rotate and swing extended legs over the bar. Lift the head and extend the arms to raise the torso into front support. • **Final Position:** Front support.

HANDSTANDS

First level of variability

Handstand against swedish ladder

- **Starting Position:** Squat support position in front.
- **Movement:** Climb into a handstand with the legs.
- **Final Position:** Handstand support position.

Swing to handstand

- **Starting Position**: Squat support position.
- **Movement:** Swing one leg into a handstand position.

Headstand

- **Starting Position:** Standing with one leg forward, arms raised.
- **Movement:** Take a long step forward with the front leg, place the hands on the ground, and swing the back leg into a handstand position. Join the second leg, focusing the gaze on the hands. Hold the position for a few seconds, then step back to the ground with one leg followed by the other, returning to the starting position.
- **Final Position:** Standing with one leg forward, arms raised.
- **Assistance:** To assist with a hadstand, stand behind the

	person, hold their hips, and help them maintain their balance

Second level of variability

	**Handstand** • **Starting Position:** Standing with one leg forward, arms raised. • **Movement:** Take a long step forward with the front leg, place the hands on the ground, and swing the back leg into a handstand position. Join the second leg, focusing the gaze on the hands. Hold the position for a few seconds, then step back to the ground with one leg followed by the other, returning to the starting position. • **Final Position:** Standing with one leg forward, arms raised. • **Assistance:** Stand on the side of the swinging leg, hold it, and assist the person in reaching the handstand position.

Third level of variability

	**Handstand into forward roll** • **Starting Position:** Standing with one leg forward, arms raised. • **Movement:** From the initial position, take a long step forward with the front leg, place the hands on the ground, and swing the back leg into a handstand position. Join the second leg and focus the gaze on the hands. Hold the handstand for a few seconds, then let the body move forward,

	bending the arms, tucking the head, and performing a forward roll. Finish by standing upright. • **Final Position:** Standing with feet together, arms raised. • **Assistance:** Hold the legs and slowly lower the individual into a forward roll **Handstand on gymnastic equipment** • Handstands can also be performed on a bench, low beam, or high beam.

VAULTS

First level of variability

Squat on, jump off

- **Movement:** Approach, single-leg take off before the springboard, followed by two-foot take off on the springboard, jump into a squat on the equipment, and jump off and land using a flexing of the knees to reduce an impact on the joints.
- **Final Position:** standing, arms forward Assistance: We stand sideways, follow the movement, grab the belt, and stop him on the vaulting horse.
- **Assistance:** We stand sideways, observe the movement, grab the belt, and stop him on the vaulting horse.

*Mount to crouched support can be performed on:

- The vaulting box
- The vaulting horse
- The vaulting table
- The beam

Second level of variability

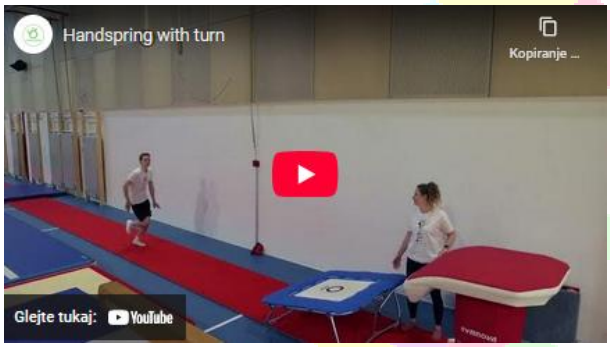
Straddle through

- **Movement**: Approach, single-leg take off before the springboard, followed by two-foot take off on the springboard, hand support on the equipment, lifting the hips above the shoulders while spreading the legs. Push-off with the hands, move the hips forward, and land.
- **Assistance:** We stand facing the exerciser, hold them by the upper

	arms, and assist them in moving over the vaulting horse.
	**Squat trough** • **Movement:** Approach, single-leg take off before the spring board, followed by two-foot take off on the springboard, hand support on the equipment, lifting the hips above the shoulders, tucking the legs and passing them between the arms. This is followed by a push-off with the hands, body extension, and landing. • **Assistance:** We stand sideways, hold the nearer upper arm, and assist them in moving over the vaulting horse. **Examples:** ● Straddle vault over the vaulting horse ● Tuck vault over the vaulting horse ● Straddle vault over the vaulting table

Third level of variability

	**Handspring forward** • **Movement**: Approach, single-leg takeoff before the springboard, followed by two-foot takeoff on the springboard, hand support on the apparatus, lifting the torso, passing through a handstand position, and pushing off with the hands to land. • **Assistance:** We follow the movement and assist in performing the rotation/movement by pushing at the thighs



Handspring with turn

- **Movement**: Approach, single-leg takeoff before the springboard, followed by two-foot takeoff on the springboard, hand support on the apparatus, 90° rotation, lifting the torso, another 90° rotation, passing through a handstand position on the hands, push-off with the hands, and a final 90° rotation inward before landing.
- **Assistance:** We follow the movement and assist in performing the rotation/movement by pushing at the thighs.Front handsprings and round-offs can be performed over:
  - A pile of mats,
  - Vaulting horse,
  - Vaulting table,

CONCLUSION

The development of motor skills is a fundamental part of lifelong physical development and must be integrated into a young athlete's development model. Incorporating structured motor skill development into sports programmes is essential to promote and enhance these skills during the critical growth periods of children and young athletes. Properly timed interventions allow participants to develop coordination, balance, strength and adaptive skills that serve as a foundation for future physical activity and overall well-being.

This textbook describes a progressive model approach to motor skill development that begins with basic exercises, progresses to intermediate challenges, and culminates in sport-specific scenarios.

The first stage emphasises various basic movement tasks that build confidence and stability, focusing on activities such as balancing, rolling and twisting. Exercises are presented in an accessible manner suitable for basic gyms and minimal equipment to ensure wide implementation.

The second level builds on this foundation by introducing variability and complexity, allowing participants to refine their movements through experimentation and correction. This stage not only develops physical skills but also encourages cognitive processes such as problem solving and decision making, which are crucial for sport and overall development. It ensures that young athletes learn to adapt to different conditions, enhancing their ability to perform in different circumstances.

At the third level, the development of motor skills is integrated into sport-specific training that prepares participants for high-performance scenarios and competitions. The exercises at this stage are modelled on real sports environments and combine technical and tactical demands with physical execution. By emphasizing sport-specific applications, this level ensures that athletes transition seamlessly from training to play and are equipped with the necessary skills to excel.

An important aspect of this programme is the focus on safety and accessibility. From padded mats to simplified drills suitable for basic facilities, the model emphasizes injury prevention and inclusion. This approach not only supports consistent practice, but also encourages wider participation, regardless of the resources or facilities available.

Incorporating motor skill development into the organizational model for sporting activities ensures that these important skills are cultivated at the right stages of growth. Research emphasizes the importance of early and consistent motor skills training for the development of a strong neuromechanical foundation that impacts not only physical performance, but also cognitive, social and emotional development. By integrating these principles into regular sports programs, coaches and educators can optimize the developmental trajectory of young athletes.

The development of motor skills is not an optional aspect of sports training, but an important component that must be integrated into every physical exercise training program. Structured and progressive approach ensures that children and young athletes receive enriching training at the right time that maximizes their growth potential and equips them with lifelong physical competence.

The proposed model, which emphasizes variability, accessibility, safety and skill development, is a valuable framework for promoting physical literacy and supporting an active and healthy lifestyle.

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About the project:

UPSKILLING COACHES FOR CHILDREN¨S MOTOR DEVELOPMENT (The PETIT project)
Web page of the project: https://petit.endorfin.si/

PETIT was an Erasmus plus co-funded initiative aiming to upskilling coaches for children's motor skill development. The project aimed to develop and promote overall motor skills for children up to 12 years of age. Children development and motor learning are the most important segments that need to be developed until the onset of puberty and sports activities. It often happens that in the training processes of individual sports organizations there is a lack of time or perhaps additional knowledge with which the coach would place the development of coordination in the process of training. With this project we created innovative and interesting approaches for the development of children's coordination. The main goal of the project was to produce materials with elements of learning basic motor skills. Learning content is available to trainers through video material which would explain both the theory of children's development and innovative exercises for development.

The specific objectives of the project were:

- raising awareness of the status and importance of children's involvement in a motoric development exercise program to the coaches and stakeholders of the sport clubs
- improve the knowledge of the theory regarding the neuro-mechanical basis of kinesiology.
- collection of examples of best practices and recommendations of experts and programs in the field of motoric development. In addition, a digital manual with video content.
- exchange of information and presentation of innovative practices in the inclusion of children in the various exercise programs.

"The result of the project was the training of sports professionals who became acquainted with innovative methods designed to accelerate the development of motor skills and their implementation in various contexts within the sports learning process. Additionally, a digital handbook with video content titled 'Petit guidelines for the development of children's motor skills' was placed in a local sports club, featuring best practices and methods contributed by all professionals involved in the project."
The video training format is designed to support coaches and teachers working with children and young people in developing motor skills through structured and progressive exercise routines. The content is divided into chapters, each focusing on specific movement tasks. Within each chapter, exercises are systematically presented in three levels of variability, from basic to more complex forms, allowing

gradual progression and adaptation to individual needs and skill levels. Each exercise is accompanied by a clear video explanation, ensuring correct execution and offering guidance on motor development of the participants. The video format serves as a practical tool to complement theoretical knowledge and promote a deeper understanding of motor learning principles. By using a consistent structure across all chapters, the training supports step-by-step implementation in both individual and group settings. This format is particularly valuable in educational and sports environments aiming to improve motor competence in a sustainable way.

Main project outputs were:

1. Raising awareness of the status and importance of children's involvement in a motoric development exercise program to the coaches and key stakeholders responsible to the management of the sport clubs,
2. Improve the knowledge of the theory regarding the neuro-mechanical basis of kinesiology, - collection of examples of best practices and recommendations of experts and programs in the field of motoric development,
3. Exchange of information and presentation of innovative practices in the inclusion of children in the various exercise programs.
4. The video training format intended for coaches and key stakeholders in order to improve the training processes with exercises for children motor skill development

Partnership association:

Roles and contribution of each partner in the project consortia:
Partners were cooperate in all WP, in which they had special assignments in tasks and deliverables. Project activities were lead experienced professionals, researchers, sport trainers, sport volunteers, who were be previously appropriately trained.
Responsibilities and all partners tasks were:

Coordinator

SPORT CLUB ENDORFIN

Was responsible for management, coordination, establishing project consortium, organization of transnational partners meetings and virtual meetings, monitor the progress of projects and plan the quality assurance indicators. Cooperation in research, selection of the best practices and concepts for

developing motor skills for children. Coordination and leader of the process for development of the optimal set of training exercises for improving motor skills abilities. Implementation workshops training for coaches, key stakeholders in the field of education and co-financing sport activities and pilot implementation of sport programmes for children in Slovenia.

Partner

UNIVERSITY OF PRIMORSKA, FACULTY OF HEALTH SCIENCES

Was responsible for the development of sports training video training format-VTF for PETIT. Participation in project research, selection of best practices and concepts of training and exercises for developing coordination abilities for children up to 12 years old. Active/leading participation of the implementation of a training program for trainers, coaches and representatives of educational and sports organizations. Implementation workshops training for coaches, key stakeholders in the field of education and co-financing sport activities and pilot implementation of sport programmes for children in Slovenia. Participation in promotional activities, networking in Slovenia.

Partner

ASD ACCADEMIA PALLAMANO Conversano 2014

Was also responsible for development along with University of Primorska with leading and active participation in developing the questionnaires for making research phases for selection of best practices and concepts of the project. Support the implementation of a training program for trainers, coaches and representatives of educational and sports organizations. Participation in promotional activities, networking in Italy.

Partner

SPORT VIV

The role of the partner was a coordination of the dissemination area of the project. Participation in transnational partner meetings and virtual meetings. Participation in PETIT research, selection of best practices and concepts of the project. Implementation of workshops training for coaches, key stakeholders in the field of education and co-financing sport activities and pilot implementation of sport programme for children in Croatia.

PETIT