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THE IMPORTANCE OF NEUROCORRECTION EXERCISES FOR PRESCHOOL CHILDREN WITH DELAYED MENTAL DEVELOPMENT

Annotation:
Neurocorrection exercises play a crucial role in the development of preschool children with delayed mental development. These exercises are designed to stimulate cognitive functions, improve attention, memory, and speech, and enhance the overall psychomotor skills of children. Regular, structured neurocorrection activities help to compensate for developmental delays, support social adaptation, and prepare children for successful learning in primary school. The effectiveness of these exercises is maximized when combined with individualized approaches, consistent practice, and the involvement of both educators and parents. Implementing neurocorrection programs in preschool education ensures early intervention, which is critical for fostering the child's cognitive, emotional, and communicative growth.

Аннотация:
Нейрокоррекционные занятия играют ключевую роль в развитии детей дошкольного возраста с задержкой психического развития. Эти занятия направлены на стимуляцию когнитивных функций, улучшение внимания, памяти и речи, а также на развитие общих психомоторных навыков детей. Регулярное и структурированное проведение нейрокоррекционных упражнений способствует компенсации задержек в развитии, поддерживает социальную адаптацию и подготовку к успешному обучению в школе. Эффективность занятий повышается при индивидуальном подходе, систематической практике и активном участии как педагогов, так и родителей. Внедрение программ нейрокоррекции в дошкольное образование обеспечивает раннее вмешательство, что является важным для формирования когнитивного, эмоционального и коммуникативного развития ребёнка.

Thus, for preschool children aged 3–4, the tasks include the development of sensory systems, coordination of movements, speech, and thinking. Much of the work is aimed at harmonizing the activity of the right hemisphere of the brain, as it is responsible for the holistic perception of objects.

For older preschool children, the focus shifts to the development of voluntary regulation and cognitive activity. Special attention is given to optimizing the activity of the frontal lobes, which are responsible for willpower and self-control.

For school-aged children under 7 years old, it is important to improve neurodynamics, work on muscle tone, develop regulatory functions, and enhance the functioning of the sensory systems to increase the efficiency of information processing.

For non-verbal children, developmental activities are crucial for stimulating their sensory systems, sense of rhythm, and both gross and fine motor skills. Working with the right hemisphere, which is responsible for recognizing non-speech sounds, is very important, followed by work with the left hemisphere to develop phonemic perception.

For children with attention deficit disorders, corrective work is focused on improving the activity of subcortical structures, sensory systems (particularly the vestibular system), and developing self-regulation and control.

Many parents are often surprised by how neuropsychologists work with children. In our clinic, we offer individual sessions based on a pre-designed treatment plan. These sessions include movement and breathing exercises, stretching, sensory-integrative techniques, articulation skill development exercises, and cognitive development activities.

Group sessions can be organized for older preschool children or younger school-aged children. There are also group sessions for children with disabilities. These activities also help develop the children's communication skills. Children are grouped according to their needs.

The standard course of neurocorrection sessions consists of 28 sessions, held twice a week, which takes approximately three and a half months. In practice, this may vary. If a child requires only correction against a background of normal development or needs to develop a specific skill, the course may be much shorter. However, we often aim for long-term interaction with the child's family. Therefore, several courses of 28 sessions each can be organized, with breaks in between.

NEUROEXERCISES

In addition to sessions at the neurocorrection center, the specialist provides small homework tasks, including:

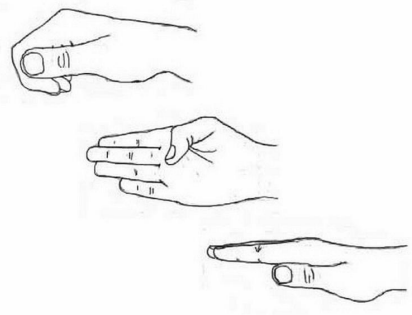
- Active and emotional games;
- Ball games to develop hand-eye coordination and gross motor skills;
- Eye movement exercises to expand the visual field and improve visual perception;
- Finger exercises to develop fine motor skills and interhemispheric interaction.

The neuropsychologist also gives practical recommendations for organizing daily communication in a way that supports the development of the child's speech.

If necessary, homework is provided along with a video demonstration.

Overall, neuropsychology provides tools to create a set of exercises that continuously activate the necessary areas of the brain.

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NEUROEXERCISES FOR CHILDREN

Let's give an example of a beneficial neuro-game for preschool children aged 3–4.

Fist–Rib–Palm Exercise

We suggest playing while sitting at a table or on a chair, placing your palms on your knees. Three hand positions are alternated in sequence:

- Fist;
- Edge of the palm (flat);
- Palm flattened with the inner surface pressed against the table.

Perform the exercise first with your right hand, then with your left hand, and then with both hands together. You can say: fist, edge, palm. Repeat 10–15 times. Variations: follow the adult's dictation or imitate your partner's movements. Once it becomes easier, change the sequence (edge–fist–palm).

"Bulgaria" is an engaging brain-training game for children and adults.

The rules of the game are as follows: In Bulgaria, it is the opposite. The affirmative answer—"yes"—is indicated by a slight turn of the head (in Russian culture, this usually means "no"). "No" is indicated by shaking the head (Russians express agreement this way). During the game, the leader asks questions, and the player answers in Bulgarian. For example, if asked, "Is this apple round?" the player must shake their head side to side. Answering with Bulgarian gestures while thinking in Russian is a more challenging variation. For a round apple, the player makes a negative gesture and says "yes."

Any ball game is also a form of neurotraining: passing the ball to music, tossing it upward and clapping, or holding balls of different sizes and weights with both hands. All of this can be done while maintaining balance.

Asynchronous neuroexercises are excellent preparation for school. As confirmed by Nobel laureate Roger Sperry, learning efficiency significantly increases when methods are used to coordinate the left and right hemispheres of the brain during the learning process.

Here is an example of such an exercise:
Place your right hand on the tip of your nose and your left hand on the front of your right ear. Cross your hands. Then, clap your hands and change positions: place your left hand on your nose and your right hand on your left ear. Start slowly, but gradually increase the speed.

NEUROEXERCISES FOR HANDS

Neuroexercises for the hands are the most convenient and time-saving way to train your brain. They are suitable for both children and adults.

Practical guide for hand neurotraining:

- Use your non-dominant hand—try brushing your teeth, combing your hair, using your smartphone, or eating with your non-dominant hand.
- Massage your palms and fingers—for yourself or your children. You can use rollers, needles, or compression massagers.
- Learn neuro-gymnastics exercises for the hands. Here is an example:

Good, okay
The right hand shows "class" (thumb up), and the left hand shows "OK" (thumb and index finger tips touching to form an "O"). The goal is to gradually increase speed while simultaneously changing the shapes of both hands.

Our neuropsychologists regularly teach children a variety of exercises, progressing from simple to complex, and also teach the exercises to parents for home practice.

NEURO-EXERCISES FOR ADULTS

The benefits of neuro-exercises are also clear for the adult brain:

- They are a quick way to restore focus and work efficiency.
- For older adults, such exercises serve as an excellent preventive measure against age-related changes and are beneficial for memory.
- They are a method to enhance creativity and problem-solving skills for non-standard tasks.

Practical recommendations for maintaining a “young brain” include:

- Use your brain purposefully – learn something new. Choose a new area of knowledge and study it deeply and systematically.
- Learn new skills – start ice skating, learn to dance, sew sneakers—anything you enjoy.
- Play board games.
- Avoid overexertion. If you feel tired, close your eyes and do breathing exercises for five minutes. Your eyes expend a lot of energy—just like your legs when walking.
- Avoid snacking. The brain requires a constant supply of energy from main meals. Snacking causes sharp rises and drops in blood sugar, leading to energy loss and lethargy.
- Practice neurogymnastics: asynchronous neuro-exercises, drawing (or writing) with both hands simultaneously, undergo neurodiagnostics, and order a personalized set of exercises from a neuropsychologist.

Neuropsychologists evaluate the child’s current developmental level, study the causes of developmental disorders, create a correction program, and conduct neurocorrection sessions.

Neurologist

Provides the medical basis for rehabilitation and correction: prescribes diagnostics, organizes neurological treatment (including manual therapy and reflexology sessions, prescribing and monitoring neuromodulation courses—which may involve vagus nerve stimulation and/or micro-polarization).

In summary, the neurologist:

- Assesses hand function, develops precise hand movements and psychomotor coordination,
- Identifies causes of limitations in self-care, learning, daily life, and play,
- Adapts the child’s environment to support skill development,
- Corrects feeding difficulties and develops toileting skills.

Equipment and methods may include ergo-apartments (practice areas for self-care skills), sensory stimulation devices, orthoses, and adaptive tools.

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