

## Possibilities of induction therapy in children with minimal cerebral dysfunctions

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Orton (1937) was one of the first researchers to associate developmental disorders of the child with residual brain lesions. Further observations of term and premature infants showed a connection between the psychophysiological development of the child and various brain lesions (Strauss, Werner, 1947; Strauss, Lethinen, 1955), which have come to be called mild or minimal brain dysfunctions (LDM or MDM). Perinatal brain lesions most often lead to three different types of clinical manifestations, which depend on the degree and location of the damage: 1) severe motor disorders, which can be accompanied by intellectual defects of varying degrees, - a typical picture of cerebral palsy (cerebral palsy); 2) conditions in which intellectual defects come to the fore, and lighter ones can be found than with cerebral palsy, motor disorders; 3) slight brain damage without pronounced disorders of motor skills and intelligence, with a clear psychopathological picture.

The main objective of this work was to explore the possibilities use individually by the selected induction therapy programs frequencies of the brain rhythms human for activation compensatory recovery processes by cerebral in the central nervous system children suffering from minimal dysfunctions.

In the period 2003-2005 biennium at the Department of Clinical Neurophysiology FPKMR PFUR conducted complex therapy of patients with MMD (48 children) aged from 6 months to 7 years. The hardware and software complex "IMEDIS-EXPERT" with a system of multiresonance therapy in combination with methods of brain stimulation was used for treatment.- transcranial magnetic, visual and auditory. Before therapy, all children underwent registration and a mathematical analysis of the bioelectrical activity of the brain. Based on the analysis, individual programs of induction therapy with the frequencies of the human brain rhythms were selected and the characteristics of the effects were determined. The course of therapy consisted of 10 sessions. The exposure was carried out using a device for magnetic therapy "loop", located horizontally around the patient's head at the level of the upper edge of the auricle. After the course of therapy, neurological examination, psychological testing, registration of brain bioelectrical activity, and ultrasound examination of the brain were carried out.

The therapy led to positive changes in both the central and peripheral nervous systems of children. According to the data of recording the bioelectric activity of the brain, signs of an increase in the rate of brain development and an approach to the indicators of healthy children were revealed. According to the data of psychological testing and registration of cognitive evoked potentials, there were positive changes in the psycho-emotional sphere. The majority of children with speech delays showed significant improvements.

Widespread introduction of multiresonant therapy methods in combination with

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functional mapping of the brain in children with minimal brain dysfunctions and delays in psychomotor and speech development in the future will make a breakthrough in the neurorehabilitation of such children.

The preparation of appropriate guidelines and new technologies is an urgent task for the staff of the department in the near future.

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