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REHABILITATION AFTER COCHLEAR IMPLANTATION

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Abstract
This article describes the importance of cochlear implantation and post-cochlear implantation for children with hearing loss. Special pedagogue: the work of deaf pedagogues and speech therapists on the hearing of preschool children and children with cochlear implants is disclosed.

Keywords: family, cochlear, auditory perception, pronunciation, speech processor, communication, rehabilitation, deaf pedagogue

Introduction

As the number of hearing-impaired children in the world is increasing, cochlear implantation is widely used to help them hear like healthy people. The main goal of this process is to form children's auditory perception and speech after cochlear implantation, to understand and speak other people's speech, to teach them to communicate, and to bring their speech to the level of a child with normal hearing.

Complete mastery of a child with hearing impairment with oral speech requires the development of a more free understanding of the interlocutor's spoken speech and the ability to speak clearly and comprehensibly for others. The formation of oral speech develops the hearing ability of students with hearing impairment through the continuous use of individual hearing aids. A number of Surdopedagogical teachers E.L. Goncharova, I.V. Koroleva, O.I. Kukushkina, E.V. Mironova, O.S. Ni-Kola, A.I. Sataeva, N.D. Shmatko proved the need for comprehensive psychological and pedagogical rehabilitation of children after cochlear implantation surgery. The change in the child's condition during cochlear implantation and its subsequent rehabilitation led to the emergence of a new phenomenon in deaf pedagogy. Teaching a child for cochlear implantation together with healthy peers is a relatively new phenomenon for the public education system. Children need post-operative rehabilitation to fully use the hearing ability obtained as a result of cochlear implantation. The main goal of the rehabilitation course after cochlear implantation is to teach the child to perceive and understand verbal and non-verbal sound signals, as well as to teach him to use new auditory senses for the development of speech.

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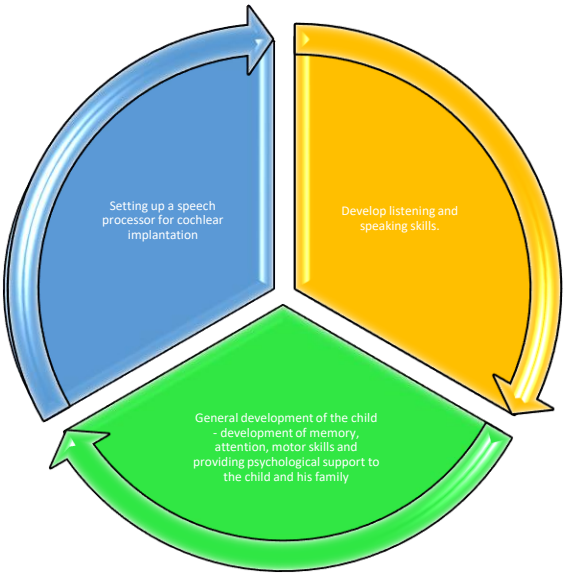
The post-operative rehabilitation process involves the participation of a group of specialists: audiologists, psychologists, speech therapists, deaf pedagogues, etc.
The course of rehabilitation of preschool children after cochlear implantation consists of the following components.



3-4 weeks after cochlear implantation surgery, the speech processor is connected to the implant and its initial configuration. An audiologist adjusts the speech processor, achieving an optimal effect in the formation of auditory sensations. From this moment on, the child can hear sounds, but long lessons with an audio teacher are required to correctly perceive and understand them. In young children, the first input and adjustment of the speech processor is a very complex process, because they cannot take into account their feelings, even if they have auditory experience. Therefore, special pedagogical exercises are needed to develop a conditioned motor reaction to the signal (for example, putting rings on cotton in a pyramid, collecting cubes in a car body to beat a drum, or throwing buttons into a box for 'pa-pa-pa', etc. It is important that training for the development of hearing in the child begins at the preoperative stage and continues until the speech processor is turned on after the operation (one week after the removal of the stitches). develop an answer.
In the course of these activities, the child also learns systematic work and develops persistence and listening skills. After the first adjustment of the speech processor of the cochlear implant, the child can hear only very loud sounds (he may not show it at all), but gradually new sensations are achieved as a result of adaptation, adjustment, learning, perception of quiet sounds. Here, the teacher's observation is very important, which should evaluate the development of the child's ability to identify low-frequency and high-frequency sounds. Specifically, a useful criterion for adequacy of tuning is the child's ability to hear low-frequency, mid-frequency, and high-frequency phonemes or words. Development of hearing and speech The deaf teacher teaches the child to use the emerging hearing, develops the correct perception of surrounding sounds and helps to form oral

speech. In a child with a cochlear implant, it is necessary to develop auditory perception in the following areas: sound identification, localization of the sound source, distinguishing between speech and non-speech sounds, distinguishing and knowing the different characteristics of sounds, distinguishing and knowing sounds in the non-speech environment, distinguishing different speech signals, knowing and recognition. (phonemes, words, phrases).

Pedagogical rehabilitation of children after cochlear implantation Unlike conventional hearing aids, which only amplify sound, cochlear implantation bypasses non-functioning parts of the ear and transmits signals directly to the auditory nerve. Thus, during the operation, an electrode system is inserted into the patient's inner ear, which provides the perception of sound information through electrical stimulation of the remaining fibers of the auditory nerve. But, by itself, cochlear implantation does not allow deaf children to distinguish sound signals and use speech for communicative purposes immediately after connecting the speech processor. Therefore, after the first adjustment of the cochlear implant processor, the child needs pedagogical support in the development of hearing and speech. As a result of the study of the results of post-operative pedagogical rehabilitation, it was found that despite the appropriateness of a hearing impaired child for a certain age, the results of post-operative pedagogical rehabilitation in preschool children may differ greatly depending on a number of factors.

1. The level of hearing development and hearing experience before cochlear implantation. 2. The level of development of children's language skills and speech activity. 3. Personal psychological characteristics. 4. Presence of co-morbidities (eyesight, mind, etc.). 5. The possibility of active participation of parents (or their substitutes) in rehabilitation work. 6. Success of surgery. 7. Adequacy of speech processor settings. 8. Presence of permanent wearing of a cochlear implant. 9. The emergence of a positive experience in the development of listening and speaking skills. All young children with cochlear implants can be divided into three groups based on the level of hearing development. 1. Children who are deaf in the period before the acquisition of speech. This category includes all congenitally deaf children with cochlear implants under the age of three. 2. The second group is children with hearing experience and hearing loss during speech acquisition. 3. also consists of some children who have had prosthetics at an early age and have been effectively engaged with voice pedagogues. With the development of auditory perception in children after cochlear implantation, it is necessary to remember the following: before presenting the signal, it is necessary to attract the child's auditory and visual attention; at first, until the cochlear implant processor is sufficiently adjusted, children do not hear low sounds, and to cause a reaction, you need to use sounds of sufficient volume, they increase the duration of the hidden reaction to sounds, so after sounding, you need to take a break and give time to respond , repeat the signal in its absence, in children it often develops a reaction not in response to sound, but to the time of stimulus delivery, therefore, when developing a motor reaction to sound, it is necessary to change the duration of the interval between signals. With the regular work of teachers and parents, the hearing ability of young

children after cochlear implantation develops much faster than with conventional hearing aids.

Thus, children (1-5 years old) with congenital deafness and hearing loss during speech learning are one of the most promising groups in terms of hearing-speech recovery after cochlear implantation. Rehabilitation of young children takes 3-5 years, and for many children, its final goal can be considered as preparation for public school. This requires the joint efforts of cochlear implantation center specialists, specialists in this field, and the child's relatives.

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