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The Development Of Speech In Ontogenesis

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Abstract: This article analyzes the physiological and psychological mechanisms of speech development in the first year of a child's life. The maturation of the central nervous system and peripheral speech apparatus, the role of the initial sound reactions - screaming, cooing, gurgling - in the process of speech ontogenesis is highlighted on the basis of scientific sources. The formation of speech is explained by the development of auditory memory, differential perception of sounds, intonational means and the increased need for communication. The study comprehensively examines the stages of phonetic and intonational development of a child's speech, their neurophysiological foundations, and individual differences in speech development. The article substantiates the crucial importance of the early periods of speech ontogenesis in the formation of the child's future speech and cognitive competencies. Psychological, pedagogical and methodological literature on the topic of stages of speech development in ontogenesis, anatomical and functional features of the central nervous system and peripheral speech apparatus has been studied and analyzed.

Keywords: Ontogenesis, communication, intonation, gesture, speech apparatus, voice, nervous system.

Introduction: The anatomical and functional features of the central nervous system and peripheral speech apparatus continue to develop after the birth of the child and reach a mature level only in the process of general somatic, sexual and neuropsychological development. Despite the fact that the child does not speak at all in the first year of life, the development of mental activities and the brain system associated with the formation of speech is very important. Oral speech presupposes the presence of a voice, and the first cries in the first week and first month of life characterize the state of the innate nervous mechanisms used in the structure of speech. The cries of a healthy child are sonorous and continuous, accompanied by short inhalations and long exhalations. The cry immediately after birth acquires various overtone coloring, depending on the condition of the child. Thus, the cry of "hunger" differs from the cry associated with a cold or other discomfort. The cry is significant in its communicative content, the first intonation, which is later recorded as a signal of disapproval.

The first stages in the ontogenesis of a child's speech are directly related to the maturation of the Central Nervous System (CNS) and the peripheral speech apparatus, and each age period includes important physiological and psychological factors of speech formation. Sound reactions of the first year of life - screams, cooing, gurgling and the first syllables - are considered natural mechanisms that support the formation of the functional system of speech. These processes are closely related not only to physiological maturation, but also to the child's socio-communicative experience, emotional reactions, and the development of sensory systems.

The child's speech development, especially during the first year, is accelerated by the maturation of the cerebral cortex and subcortical structures, the strengthening of afferent and efferent connections, and the improvement of the auditory analyzer. Crying, observed in the first weeks of life, is not only an expression of physiological needs, but also an initial form of communicative communication through intonation. The timbre, strength, rhythm and duration of the cry constitute a primary signal system that indicates the child's condition, needs and emotional background.

By 2-3 months, the cries in the child's life are enriched with intonation. During the cry, there is an increase in the inconsistency of the coordination of arm and leg movements. From this age, the child begins to influence the termination of communication with him through the cry, the removal of bright objects from the

field of vision, etc. . Often, children are affected by the stimulation of the cry, especially before sleep. The intonation enrichment of the cry indicates the beginning of the formation of the communication function in the child. The intensive period of intonation enrichment of the cry corresponds to the stages of motor development.

During the period of gurgling at 2-3 months, the child begins to actively use his voice. In the process of gurgling, a number of sounds necessary for speech appear - sounds close to vowel phonemes and consonant sounds associated with physiological movements. This period is characterized by an increased need for communication and the activation of sensorimotor coordination.

At 2-3 months of life, specific vocal reactions appear - gurgling. Moans, joyful cries are characteristic of him. They can be compared with the sounds of the native language with difficulty. However, it is possible to distinguish sounds reminiscent of vowels (a, u, e, o, i), which are much easier to pronounce; labial consonants (p, m, b), which are adapted to the physiological act of sucking, and lingual back sounds (g, k, x) associated with physiological swallowing movements.

During the gurgling period, in addition to signals of discomfort, bright cries and intonations that indicate the child's state of calm appear, and he begins to express his joy through them from time to time.

Between 4-5 months of life, the next period of speech development begins - the period of babbling. This period coincides with the formation of the sitting function in the child. At first, the child tries to sit up. Gradually, the ability to hold the body correctly in a sitting position appears, which is usually fully formed by 6 months.

The period of babbling at 4–6 months is associated with the formation of syllabic structures, the complexity of the articulatory apparatus, and the functional integration of brain systems. From this age, the child begins to produce sounds not only spontaneously, but also purposefully, which creates the foundation for the subsequent stages of speech - syllabic speech and the first words.

During this period, signs of transfer and syllabic structures appear in babbling sounds. The sound stream becomes similar to humming and begins to turn into syllables, and the psychophysiological mechanism of syllable formation is gradually formed.

Starting from 8 months, the decrease in sounds that are not characteristic of the native language is an important indicator of speech phonemic development. During this period, the child actively processes the speech forms he hears, learning to differentially perceive the system of phonemes. The phonetic features of the native language are consolidated in auditory memory, and the child vocalizes in accordance with the phonemes he hears. After 8 months, sounds that do not correspond to the phonetic system of the native language gradually disappear. New speech sounds corresponding to the phonemes of the speech environment appear.

In particular, during this period of a child's development, speech ontogenetic memory begins to form. According to the afferentations of repeated hearing, the phonetic system of the native language gradually begins to develop.

At 10-12 months, children begin to express the rhythm and intonation characteristic of their native language, trying to enter into verbal communication. At 10-12 months, the communicative significance of intonational means increases, and the child begins to combine simple phonetic structures with the rhythm characteristic of adult speech. This stage is considered an important period for the semantic development of the child's language, the combined use of speech with gestures, as well as the formation of the first words. Individual differences in speech development, including differences between girls and boys, are explained by factors such as the rate of neurophysiological maturation, temperament, sensory experience, and the communication environment. While early speech development in girls is associated with a greater tendency to communicate and the rapid maturation of the auditory-analytical system, this process occurs relatively more slowly in boys.

Pre-speech vocal reactions observed in the first year of life gradually form the functional system of speech, creating the foundation for the child's phonetic, phonemic, articulatory and communicative competencies.

They use intonation tools for communication. The elements of such pre-speech vocalization are formed by a rhythmic system similar to the rhythm of adult speech. It is known that such “words” do not correspond to real things, despite the fact that the child pronounces them clearly. This stage of speech is usually short, and the child begins to pronounce his first words much earlier.

The pace and time of understanding the speech of others coincide with the pace and time of the formation of oral speech. Starting from 7-8 months, children begin to correctly respond to words accompanied by gestures and signs.

There are several differences in the development of speech gestures in boys and girls. There are indications

that the first words in girls appear at 8-9 months, and in boys at 11-12 months.

CONCLUSION

The ontogenesis of a child's speech is a complex and multi-stage process, the foundation of which is formed in the first year of life. Natural vocal reactions such as screaming, humming and gurgling serve as the initial mechanisms for the phonetic, intonational and communicative systems of speech. At these stages, the maturation of the central nervous system, the activation of the auditory analyzer, the functional formation of the articulatory apparatus and the increased need for social communication play an important role. The analysis shows that the processes of early speech development are closely related not only to physiological growth, but also to the child's interaction with the environment, emotional connections, and the acquisition of the phonetic system of the native language through hearing. The level of vocal activity in the first year of life is a supporting factor for the subsequent speech development of the first words, syllabic speech, phonemic perception. Thus, in-depth study of the early stages of a child's speech and the formation of a scientifically based approach to them are of great importance in speech therapy practice. Correct assessment of pre-speech reactions and vocalizations during this period, early diagnosis and the use of developmental intervention measures contribute to the quality of the child's subsequent speech and mental development.

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