

## SPEECH DEVELOPMENT IN CHILDREN WITH AUTISM SPECTRUM DISORDER

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**Abstract.** Children with autistic spectrum disorders usually display various speech impediments. The aim of this article is to investigate different methods of dealing with speech defects found in autistic children. We intend to look in detail at traditional and modern therapy methods. The paper offers a wide range of techniques and modern methods which can be applied in practice.

**Keywords:** children, communication skills, social interaction, autism, educational games, interactive games, speech disorder.

The autism spectrum disorders are described by various speech deviations and avoidance of social communication. Scientists are not able to define the actual reason for this disease. Nevertheless, treatment methods and therapies have advanced significantly over the past few decades. In addition to that, it was defined that the abnormal and irregular growth of cerebral neurons have a notable influence on the level of ASD.

Autism as a disease can be linked to three main speech disorders the intensity of which can vary based on the disease complexity and accompanying illnesses. The first one is a pronoun reversal (using the pronoun you when the pronoun I is intended, and vice versa). Second, echolalia (repeating what someone has said). Third, a reduced or even reversed production-comprehension lag (a reduction or reversal of the well-established finding that speakers produce less sophisticated language than they can comprehend). All these deviations are associated with ASD and are considered to be unique for this illness.

Pronoun reversal, also known as the use of personal pronoun “you” instead of “I” referring to the child with autism himself and the others, was for a long time considered a unique autism characteristic. However, modern research and observations proved that this speech disorder can be found in children without ASD. Evans K. led research in which two children with pronoun reversal were observed. For several months a boy with autism disorder and a normally developed girl were observed to find the reasons for such speech impediment. According to the results, a girl had semantic confusion while using pronouns which disappeared naturally within communication, whereas the boy showed a discourse-pragmatic deficit related to perspective-taking. The author suggests that pronoun reversal can not be used to diagnose autism and is not directly associated with ASD.

Echolalia, or in other words, meaningless repetition of phrases heard by the patient, is associated primarily with autism. This imitative behavior aims to compensate for difficulties in producing one's own speech. Scientists assume that this process occurs due to the damage in the front lobe of the patient. This behaviour is defined as pathological, automatic and non-intentional.

Another speech phenomenon related to autism is an abnormal production-comprehension lag.

It means that a patient is able to produce less amount of speech compared to what he can comprehend. Children with autism may produce simple speech sounds while they may understand a

larger amount.

Traditional methods of correcting ASD disorders start with observations. As all autism cases are individual, children may have different ways of communication. For example, a child may cry in the kitchen and this would signal his hunger. Or moving the body toward the desired object is also a sign of communication. To develop speech adults should use simple words and name the object several times showing the speech pattern to the child. To encourage communication only short sentences should be used. It is hard for a child with ASD to comprehend a sentence that includes more than ten words.

Exaggerating the voice tone is another method to help children to define the objects or actions they want to perform. An adult should repeatedly pronounce the same phrase clearly stating the key word with rising intonation. Once a child gets acquainted with the target speech pattern, he can be asked to fill in the gap in the sentence by naming a keyword. It is vital to allow children enough time to correspond as ASD patients may have slow reactions. With close observations, adults may define topics which take patients attention. By discussing them, speech patterns can be developed faster compared to the general conversation.

As it was mentioned above, all autism cases are individual, hence there can not be named a unified method of improving communication skills.

Acquisition of speech patterns starts mostly with learning sight words or most commonly used ones. Due to the limitations autism disorder puts on patients, it is hard for children to interact with other human beings. In order to develop early speaking skills, digital literacy books with dynamic text and speech output are used. According to the research conducted by Mandak K., all participants felt more comfortable interacting with the touchpad and, due to numerous repetitions of the sight words, learned faster than those who were taught using traditional methods.

In the last few years, technology development allowed the creation of digital apps aimed to make the lives of autistic patients easier.

For example, Proloquo2Go is an app specifically designed for people who are nonverbal. It promotes language development and allows people to communicate through the use of pictures. It presents users with images they're most likely to use and has a level-based system for basic to advanced vocabularies.

Another example is the MITA app developed in 7 different languages. It uses pictures and speech output to develop speaking ability. Patients learn how to speak confidently and achieve language development milestones.

The Otsimo app uses techniques designed around applied behavior analysis (ABA) and alternative and augmentative communication (AAC) to help children reach speech development milestones as well as achieve desired lifestyle skills, behaviors, and much more. It has over 50 games that can be personalized to a child's specific needs, and it provides progress reports along the way that show how far they've come since using the app. In the future scientists believe that artificial intelligence and robots will be used to develop speaking skills in autistic children. In conclusion, speech deviations accompany ASD patients during their lifetime. Among three main disorders, pronoun reversal, echolalia and a reduced or even reversed production-comprehension lag are recognised. In spite of the fact that autistic disorder has been known for a few centuries, the reason for this disease is unclear. Scientists and doctors apply significant efforts to make the lives of ASD children easier by using traditional and modern methods of speech development. Due to technological achievements, the learning process became more comfortable and effective for people suffering from autism. Researchers believe that digitalisation will improve their chances for normal functioning and socialisation.

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