

Abstract, ICPLA

## Language skills in Noonan syndrome

Noonan syndrome (NS) is a congenital syndrome giving various physical and cognitive symptoms, including language difficulties. As Pierpont (2015) points out in a review-article, former studies have focused largely on intellectual and social-emotional aspects in NS (Pierpont, Weismer et al. 2010) is an exception). The present study aims at describing a possible linguistic profile in NS. A group of children and adolescents with NS have been tested by various linguistic and related cognitive tests, to try to discover areas of strength and difficulties in the language of children and adolescents with NS.

The following research question is posed: Is there a typical profile associated with linguistic skills in children and adolescents with NS?

17 children and adolescents with NS participated in this study, aged from 6;8 – 15;8 (mean age 10;5, SD 32.4). The participants were diagnosed either based on gene analysis or clinically. Their scores were compared to standardized norms where such are available, and also a group of controls matched on age and gender and partly with a reference group of typically developing eight year olds.

The participants were tested with a battery of linguistic tests of vocabulary, speech production, morphology, syntax, semantics and storytelling, and with tests of language-relevant cognitive skills such as word recall, vocabulary learning and phonological memory.

The parents of the participants filled in the Children's Communication Checklist, 2.nd edition (Bishop 2003).

The results show larger inter-individual variability in the NS group than among the TD controls. A main finding is poorer scores on pragmatic abilities among the children and

adolescents with NS than among the typical controls. There is also a gender difference. More girls than boys have a poor pragmatic competence. Articulatory problems are not frequent in the NS group. Syntax and vocabulary are areas of relative strength, while morphology seems to be a problematic field for the speakers with NS. The cognitive tests show that visual and verbal long term memory and word recall are areas of relative strength, while phonological memory, visual processing and working memory are areas of relative weakness.

This study gives us a broader insight in the difficulties schools should be prepared for when meeting children and adolescents with NS.

Bishop, D. V. (2003). The Children's Communication Checklist, Harcourt Assessment London.

Pierpont, E. (2015). "Neuropsychological Functioning in Individuals with Noonan Syndrome: a Systematic Literature Review with Educational and Treatment Recommendations." Journal of Pediatric Neuropsychology: 1-20.

Pierpont, E. I., et al. (2010). "The Language Phenotype of Children and Adolescents With Noonan Syndrome." Journal of Speech Language and Hearing Research **53**(4): 917-932.