

Gender and genes play an important role in delayed language development

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(Medical Xpress)—Boys are at greater risk for delayed language development than girls, according to a new study using data from the Norwegian Mother and Child Cohort Study. The researchers also found that reading and writing difficulties in the family gave an increased risk.

"We show for the first time that reading and writing difficulties in the family can be the main reason why a child has a speech delay that first begins between three to five years of age," says Eivind Ystrøm, senior researcher at the Norwegian Institute of Public Health.

Ystrøm was supervisor of Imac Maria Zambrana, a former PhD student at the Norwegian Institute of Public Health who conducted the research

in this study as part of her doctoral research.

The researchers used data from questionnaires completed by the mothers who are participating in the Norwegian Mother and Child Cohort Study (MoBa). The study included more than 10,000 children from week 17 of pregnancy up to five years of age.

"MoBa is a large study with a normal cross-section of the population. It gives us a unique opportunity to examine changes over time, the scope and any risk factors for delayed language development," says Ystrøm.

Mostly boys

The researchers classified the language difficulties at three and five years of age in three groups: persistent delayed language development (present at both times), transient delayed language development (only present at three years) and delayed language development first identified at five years old.

Boys are in the majority for the groups with persistent and transient language difficulties. Ystrøm explains that boys are biologically at greater risk for developmental disorders in utero than girls. British scientists have measured the male sex hormone (testosterone) in amniotic fluid and they found that the levels were related to the development of both autism and language disorders. Ystrøm points out that boys are generally a little later in language development than girls, but that most catch up during the first year. Therefore, many boys could be at risk of persistent language impairment and increasingly have transient language difficulties that disappear before school age.

The researchers found that gender was irrelevant for the third group who have language difficulties that begin sometime between three and five years of age.

Hereditary factors

We have good knowledge about normal language development in children. Many genes are important for language development and research suggests that different genes are involved in different types of language difficulty.

"Reading and writing difficulties in the family are the predominant risk factors for late-onset language difficulties. We see no language problems when the child is between 18 months and three years old. They are latent" says Ystrøm.

The researchers believe that both specific genes and factors in the child's external environment can lead to delays in language development at three to five years of age.

What can we do?

Ystrøm believes that children with delayed language development must be identified as early as possible. Parents, health care workers and child care staff should be aware of the language development of children and encourage an enabling language environment, in some cases with specially adapted measures. In particular, they must be aware of children who have sustained disabilities, or who have had normal language development up to three years and then unexpectedly began to have difficulties.

"Professionals and caregivers must be vigilant. It is difficult to detect language difficulties when language becomes more complex in older children. They must be trained so that they are confident in how to spot language difficulties and how to encourage a child's language. We need more research into the needs of children with different trajectories",

says Ystrøm.

Parents who are concerned about their child's [language development](#) should consult their doctor. They should also raise the issue at the regular check-ups at the health clinic when the child is between two and four years old.

"The checks must take place at the appropriate time. It is important that they are not delayed or not implemented at all," says Ystrøm.

A few years ago, a survey by the Health and Welfare Department in Oslo showed that few of the health centres in Oslo met the required 14 consultations for each child from birth to school stipulated by the Norwegian Directorate of Health.

More information: Zambrana, IM, Pons, F., Eadie, P. and Ystrom, E. (2013), "Trajectories of language delay from age 3 to 5: persistence, recovery and late onset." *International Journal of Language & Communication*, [DOI: 10.1111/1460-6984.12073](https://doi.org/10.1111/1460-6984.12073). [Epub ahead of print]

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