

Language dysfunction in children may be due to epileptic brain activity

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Epileptic activity in the brain can affect language development in children, and EEG registrations should therefore be carried out more frequently on children with severe language impairment to identify more readily those who may need medical treatment, reveals a thesis from the Sahlgrenska Academy at the University of Gothenburg, Sweden.

The thesis studied 60 children of varying ages, divided into groups. The first group comprised children with language dysfunction, for example children with slow speech development who find it difficult to express themselves or who have an inadequate language comprehension.

The second group consisted of children with epilepsy, while the third comprised children with language dysfunction and epileptic brain activity, sometimes without epileptic seizures. The study was carried out in conjunction with speech and language pathologists, pediatric neurologists and neuropsychologists at the Queen Silvia Children's Hospital in Gothenburg.

"We reviewed patient records of children with residual speech and language problems at school start, and could see that these children also had other underlying problems," says Gunilla Rejnö-Habte Selassie, speech and language pathologist and researcher at the Department of Clinical Neuroscience and Rehabilitation.

The study showed that epilepsy (with seizures) and epileptic brain activity with or without seizures were more common in these children

than in children in general. The researchers then wanted to investigate whether the epileptic activity was the cause of the children's language dysfunction or whether other factors affected their [language development](#).

"So we also looked at speech and [language ability](#) in preschool children with various forms of epilepsy," says Gunilla Rejnö-Habte Selassie. "We found that these children had certain language problems - they found it difficult to express themselves but had a good understanding of language."

The greatest problems were to be found in children with epileptic activity in the left side of the brain, which controls our linguistic ability.

The next step was to look at children with both speech and language dysfunction and epileptic brain activity in their sleep as young children, and follow up their speech, language and other cognitive abilities after some years.

"We found that more than half the children of school age and young adults still had some form of language difficulties, while a few had normal linguistic abilities," says Gunilla Rejnö-Habte Selassie. "There was no difference between the children with continuously slow language development and those who had experienced a loss or deterioration of their language - so called epileptic aphasia."

She concludes that more children with language dysfunction should be given EEG registrations to find an explanation for the underlying mechanisms, and so that the right care and treatment can be given. She also states that in some cases medical treatment could be considered to block the epileptic activity in the brain, and in this way reduce the impact on a child's language development.

"We hope that the results of our research will lead to a new way of

looking at various diagnoses of language dysfunction and epileptic brain activity. More than anything, we need a completely new diagnosis for children with slow language development and epileptic [brain activity](#)."

Epilepsy takes the form of seizures, with or without the loss of consciousness and simultaneous convulsions. The seizures are due to temporary overactivation of the brain's electrical nerve impulses that can be registered with an electroencephalogram (EEG). Around 0.5 per cent of all children are estimated to have a tendency towards repeated [epileptic seizures](#). The cause of epilepsy may be temporary or permanent damage to the brain, but a cause cannot always be identified. There are medicines to alleviate the symptoms.

Provided by University of Gothenburg

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