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Sign language may be helpful for children with rare speech disorder

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Credit: Magda Ehlers from Pexels

Using sign language with intensive speech therapy may be an effective treatment for children with a rare speech disorder called apraxia of

speech, according to Penn State College of Medicine researchers. They suggest further exploration of the results of a case study showing the effectiveness of using several therapies together in cases of early diagnosis.

Childhood apraxia of speech occurs when children have difficulty saying words or sounds because the muscles involved do not coordinate properly. It is generally diagnosed in children at about two-and-a-half years of age and confirmed at age three or later. In the case study, the child was diagnosed earlier, at 18 months.

"Because early intervention is beneficial in other developmental conditions, we wondered if a similar approach might also yield better progress in a child thought to have apraxia," said Cheryl Tierney, associate professor of pediatrics. "Very little is scientifically proven when it comes to 'best practices' but there is a growing body of literature that is helping to guide treatment for this rare speech sound disorder."

The child in the case study was taught sign language as a way to communicate while his verbal speech developed. While research has been done on using alternative methods of communicating while speech develops—like devices that provide an electronic voice—none has been done on using sign language exclusively.

"There is a common misperception that if you teach a child sign language or give them a device to speak for them this will slow down their progress when learning to speak using their voice," Tierney said.

Previous research has shown, however, that sign language can be a way to encourage attempts at verbal speech and reduce frustration.

In the case study, the patient underwent intensive speech therapy using two known therapeutic programs – one to develop mouth muscle control

and the other to develop sounds. His mother was also given a home program to help with the patient's tongue movement. Before the treatment, he had limited verbal communication skills. After treatment, he was able to hold conversations with his parents, who reported understanding at least 90 percent of what he said. His speech therapist understood at least 80 percent of what was said. The patient discontinued use of sign language on his own as his speech developed. Researchers reported the results in *Pediatrics*.

"We suspect that early introduction of sign language by the family proved to be a highly effective form of language development that, when used with sound therapy and therapy to improve the functioning of the mouth muscles, helped correct speech issues quickly," Tierney said. "More research is needed to determine how much the use of sign language contributed to such rapid correction of apraxia of speech. However, our case highlighted that when we combined early detection, early treatment and the use of sign language we had an optimal outcome which suggests an area of further study."

Future studies should be designed to determine which children may respond best to early intervention, use of several treatment methods at the same time and the use of sign language and other alternative communication techniques to promote more rapid resolution of symptoms.

More information: C. D. Tierney et al. Bridging the Gap Between Speech and Language: Using Multimodal Treatment in a Child With Apraxia, *Pediatrics* (2016). DOI: 10.1542/peds.2016-0007

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