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SPEECH & LANGUAGE DISORDERS IN CHILDREN

# Auditory Processing deficits in children with stuttering

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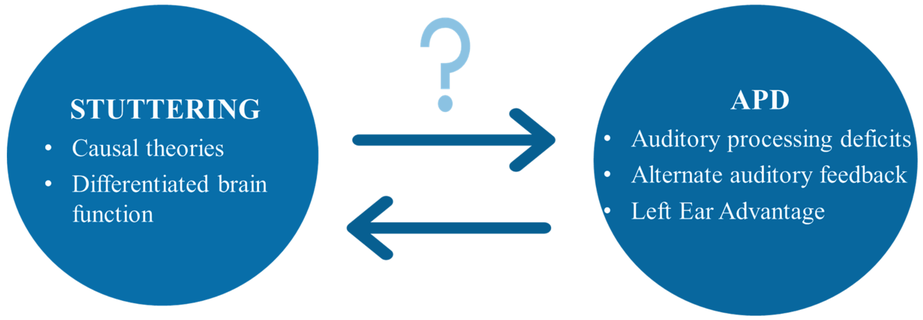
## Abstract

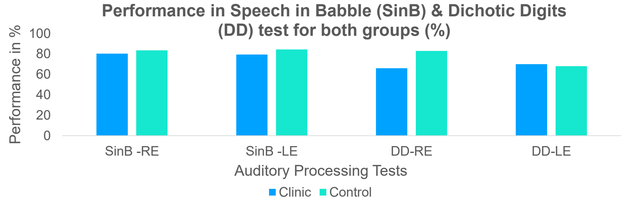
Stuttering, a neurodevelopmental speech disorder with unclear etiology (1) is associated with auditory processing deficits and Left Ear Advantage (LEA) (2). The exact connection between stuttering and auditory processing remains undetermined as it is unclear whether auditory processing deficits contribute to the onset of stuttering or if they are a consequence of stuttering (2).

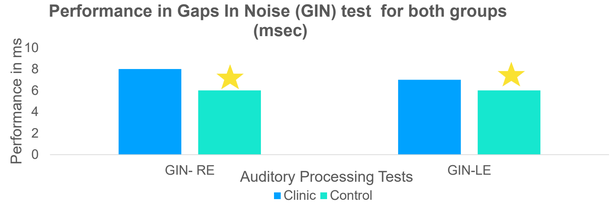
This study examined auditory processing abilities in children who stutter (CWS) compared to non-stuttering peers. Findings revealed that CWS performed worse on auditory processing tests and showed a negative laterality index, indicating auditory processing deficits and LEA in this population.

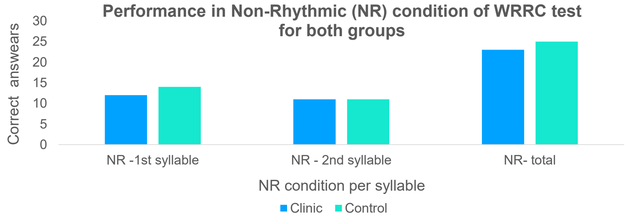


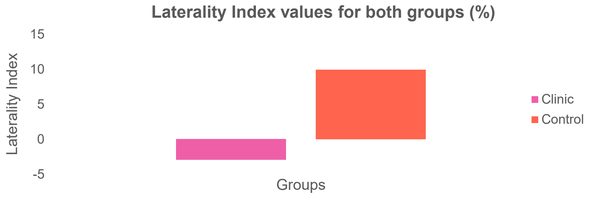

## Results

The clinical group showed significantly lower temporal performance on the GIN Test and the non-rhythm condition of the WRRC test. A trend towards statistical significance was observed in the SinB test for the left ear, with the clinic group performing worse. Additionally, the clinical group exhibited a negative laterality index, while the control group displayed a positive laterality index.




## Objectives

1. To evaluate auditory processing abilities in children with stuttering
1. To examine the hypothesis that children with stuttering exhibit Left Ear Advantage

## Conclusions

- Reduced performance in the Gap Detection in Noise test suggests auditory temporal processing deficits in children with stuttering.
- Lower scores in the Speech Recognition in Babble test indicate difficulties understanding speech in noisy environments for children with stuttering.
- Poor performance in the non-rhythm condition of the Word Recognition-Rhythm Component test.
- Negative laterality index in the clinical group suggests a left ear advantage in children with stuttering.

## Methods and Materials

- **Population:**18 children aged 7-12 years with normal peripheral hearing; 9 with stuttering (clinic group) and 9 without (control group).
- **Materials:** The test battery consisted of four tests (Speech in Babble, Gaps in Noise, Dichotic Digits, Word Recognition-Rhythm Component)
- **Methods:** Randomized order of tests using over-the-ear headphones in a quiet room at 60 dBHL.

## References

1. Smith A, Weber C. Childhood Stuttering: Where Are We and Where Are We Going? Semin Speech Lang. 2016 Nov;37(4):291–7.
2. Farazi M, Hosseini Dastgerdi Z, Khavarghazalani B. What is the role of auditory processing in stuttering? A mini review of previous knowledge. 2022.

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