

Poster presentation

## Phonemic and grapheme perception in dyslexia and (Central) Auditory Processing Disorder

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### Background

The present study endeavored to investigate the extent of co-existence of auditory processing disorder (APD) and dyslexia.

Studies such as Cestnick et. al. [1] found that APD contributes to poor non-word reading. Also, strong relation between APD and dyslexia was found by King et. al. [2].

### Materials and methods

Seventy-five children between 7.9-17.4 years of age participated in this study. All of them received a battery of auditory processing tasks along with a standardized test measuring the grapheme (visual) and phoneme (auditory) discrimination of non-words.

The children were divided into four categories: a) 25 children without APD and dyslexia (0-0) that were used as a control group, b) 21 children with APD and negative for dyslexia (1-0), c) 15 children negative for APD but positive for dyslexia (0-1) and d) 12 children positive for APD and dyslexia (1-1).

### Results

The positive APD and dyslexia group had significant lower results (standard scores) than the group without APD and dyslexia in both tasks (grapheme discrimination task, auditory discrimination task) for children aged 8 and 9 years old. On the other hand, for older children, aged 10 years old and up, the results did not have important dif-

ferences in both groups (control and positive APD and dyslexia).

The difference between younger and older children could possibly be attributed to a ceiling effect displayed by the fact that children aged 10 and up found the task easier regardless of the group we categorized them in.

### Conclusions

Perception of phonemes (through the auditory channel) and graphemes (through the visual channel) was significantly poorer in children 8 and 9 years old with co-existing Dyslexia and (Central) Auditory Processing Disorder.

### References

1. Cestnick L, Jerger J: **Auditory temporal processing and lexical/nonlexical reading in developmental dyslexics.** *Journal of American Academic Audiology* 2000, **11**(9):501-503.
2. King W. M., Lombardino L. J., Crandell C. C., Leonard C. M.: **Comorbid auditory processing disorder in developmental dyslexia.** *Ear Hear* 2003, **24**(5):448-456.