



Auditory Processing Evaluation in Patients with Neurofibromatosis Type 1

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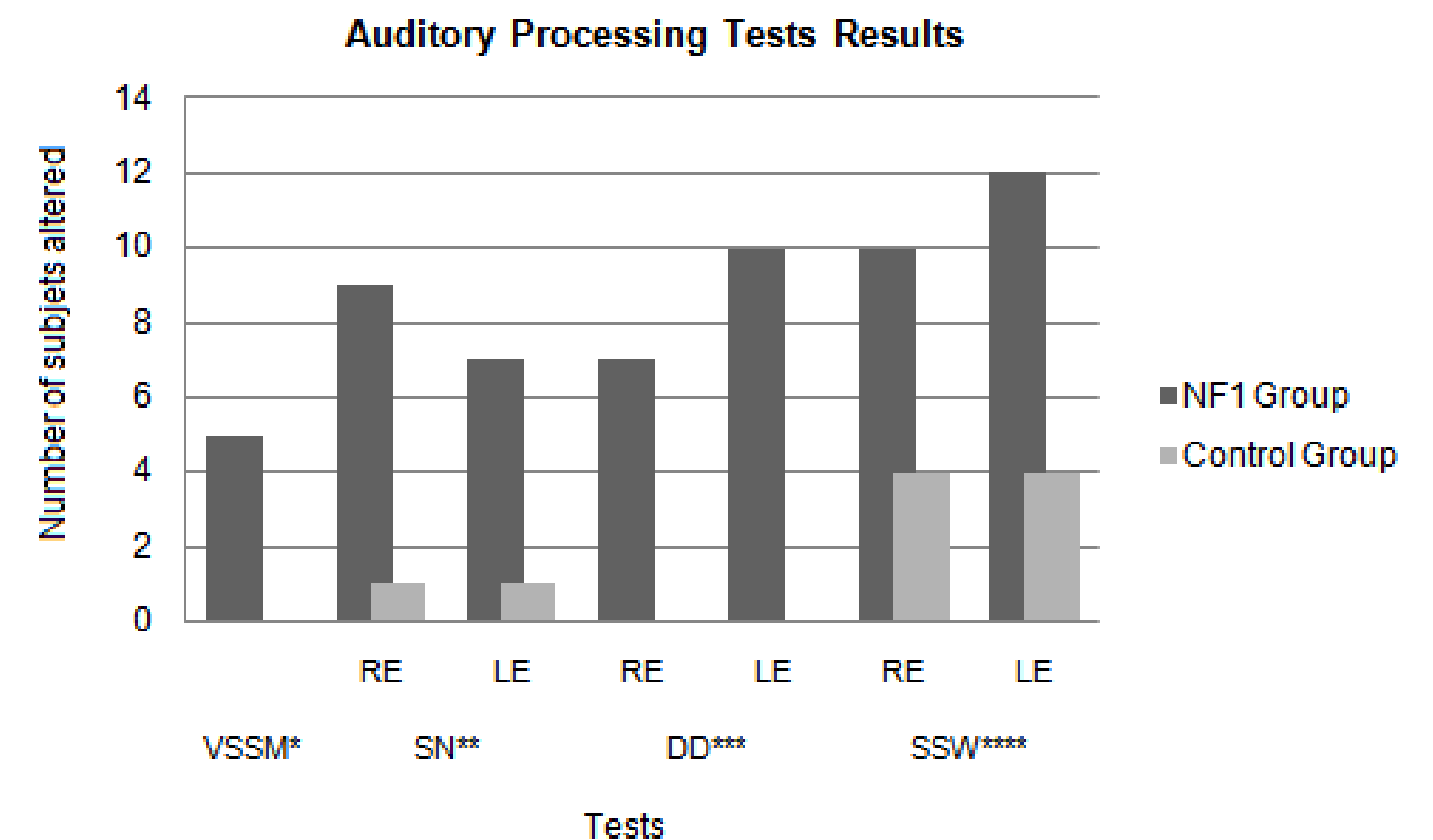
Introduction: Neurofibromatosis type 1 (NF1) is among the most common genetic disorders presenting learning disabilities as a feature. Auditory processing is the ability to use the sound stimulus heard. The proper processing of auditory information is essential for an ultimate school and cognitive skills development. Many researchers have pointed out this relationship, once hearing is the main entrance for verbal language and writing learning acquisition ².

Aim: To compare the auditory processing of NF1 patients with age and sex matched healthy individuals and evaluate the possible correlation with language and school performance.

Methods: Sixteen volunteered NF1 patients (NIH criteria, 7 male and 9 female), aged between 10 to 28 years, with hearing thresholds within normal parameters, were matched by sex and age to sixteen healthy individual, with low risk for developmental disorders, and submitted to a comprehensive oral and written language assessment. Specific procedures were: Auditory Localization Test, Verbal Sound Sequence Memory Test (VSSM) and Non-verbal Sound Sequence Memory Test, Speech in Noise Test (SN), Staggered Spondaic Word Test in Portuguese (SSW), Non-verbal Dichotic Test and Dichotic Digit Test (DD).

Results: NF1 group presented lower performance in the following auditory processing tests: verbal sound sequence memory, speech in noise, dichotic digit and the Portuguese version of the SSW. This inferior performance on the selected auditory processing tests for auditory closure and dichotic listening for verbal sounds was correlated with language disorders characterized by handicaps in manipulating speech sounds and receptive vocabulary in the NF1 group.

Conclusion Subjects with NF1 showed auditory processing disorders correlated to language disorders. These auditory processing impairments and language abnormalities could, at least in part, explain learning difficulties frequently observed among NF1 patients.



RE: Right ear; LE: Left ear

*p= 0,043; ** RE p=0,006; LE p= 0,007; *** RE p=0,007; LE p= 0,001; **** RE p=0,073; LE p= 0,012

Reference:

1. American Speech-Language-Hearing Association. (2005). *(Central) Auditory Processing Disorders—The Role of the Audiologist* [Position Statement]. Available from www.asha.org/policy.