

Neuropsychological Profiles and differences among NVLD, Asperger's patients and healthy children

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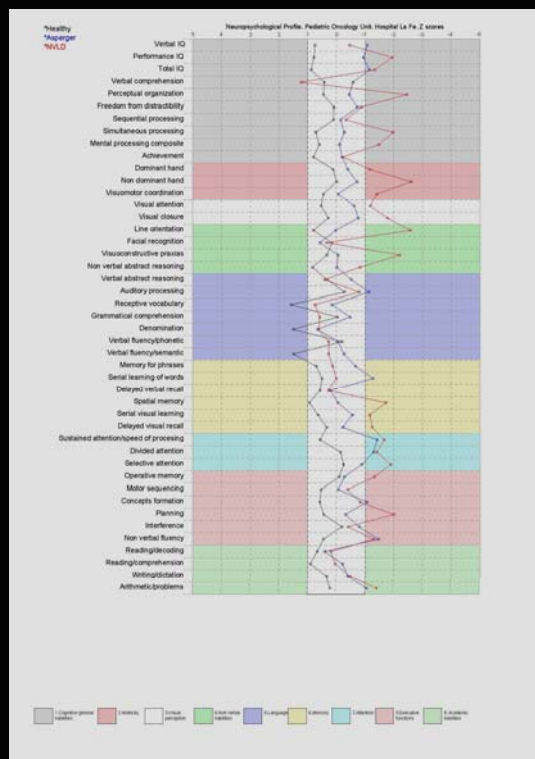
Objective: In terms of diagnose, there are problems when one tries to distinguish between Asperger's Disorder and Nonverbal Learning Disabilities symptoms.

Some authors argue that, perhaps, symptoms of each diagnose are describing the same group of children from a different point of view: Asperger as a psychiatric/behavioral and NVLD as neuropsychological. It's suggested that 80% of children who meet criteria for Asperger also have criteria of NVLD.

We wanted to find out differences in the neuropsychological profile between Non Verbal Learning Disabilities (NVLD) and Asperger Children with our patients.

Participants and Methods: 24 children were studied, median age was 9.12 (range: 7-14). There were 12 healthy, 7 Asperger and 5 NVLD children. 14 were boys and 10 girls. Statistical analysis (descriptive and ANOVA) was carried out by using SPSS 12.0 package.

These three coloured lines represented the means in neuropsychological profiles of NVLD, Asperger and Healthy children



Statistics

		Cog Gen	Motricity	Percept	Non Verbal	Lang	Memory	Attent	Exec F	Acad Ach
Healthy	Mean	0.56	0.19	0.40	0.33	0.63	0.54	0.06	0.72	0.78
	Std Dev	0.32	0.37	0.53	0.47	0.53	0.51	0.45	0.62	0.34
Asperger	Mean	-0.67	-0.39	-0.69	0.13	-0.24	-0.61	-1.30	-0.39	-0.34
	Std Dev	0.46	0.60	0.69	0.04	0.82	0.42	0.78	1.17	0.43
NVLD	Mean	-1.00	-1.73	-1.49	-1.44	0.32	-0.79	-1.62	0.42	-0.42
	Std Dev	0.32	1.01	0.41	0.49	0.29	0.77	0.86	0.41	0.61

Results:

NVLD children showed the worst scores of these three groups. They present difficulties in cognitive general abilities (performance and total IQ, perceptual organization, simultaneous and mental composite processing), motricity (dominant, non-dominant and visuomotor coordination), perception (visual attention and integration), non-verbal abilities (line orientation, visuoconstructive praxias), non-verbal memory (spatial, serial visual learning, delayed visual recall), executive functioning (working memory, planning, non-verbal fluency).

Asperger children did not present cognitive deterioration; only lower scores in cognitive general abilities (verbal and total IQ), attention (sustained, divided and selective), language (auditory processing), memory (serial verbal learning) and executive functioning (concept formation and non-verbal fluency).

ANOVA multiple comparisons: both groups showed significant differences compared to healthy in cognitive general abilities, perception, memory, attention and academic abilities.

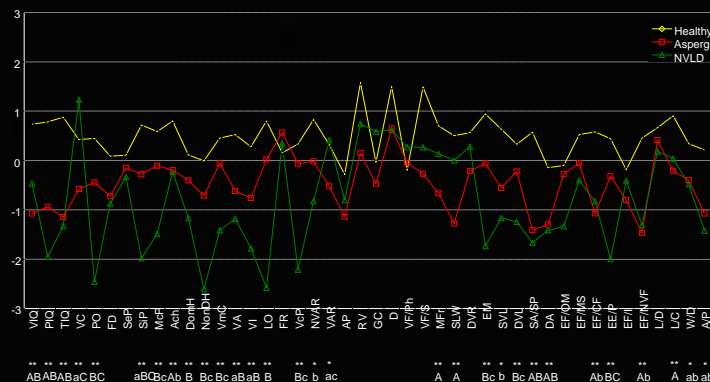
Asperger children present significant differences with healthy children in language and executive functions. The only significant differences between Asperger and NVLD children were in motricity and non-verbal abilities (NVLD present the worst scores).

Differences through neuropsychological variables with ANOVA

Differences in neuropsychological areas with ANOVA



ANOVA
 Significance level: * $p < 0.05$; ** $p < 0.01$
 Comparison among groups:
 Significance level of multiple comparisons: lower-case $p < 0.05$; capital letter $p < 0.01$
 A = Healthy-Asperger; B = Healthy-NVLD; C = Asperger-NVLD



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 A = Healthy-Asperger; B = Healthy-NVLD; C = Asperger-NVLD

Conclusions:

Results show how children with NVLD present a consistent neuropsychological profile between subjects: they have the worst scores of three groups, they don't present language deficit, Verbal IQ > Performance IQ (more than 1 Std. Dev.), discrepancies between verbal and non verbal abilities are the most salient results.

Asperger children did not show discrepancies in their neuropsychological profile as did NVLD and is less consistent between subjects. They don't present deficit in non verbal abilities, they only show lower language scores but we haven't found a clear neuropsychological profile of Asperger's. They don't show cognitive deterioration and there are no discrepancies between verbal and non verbal abilities as seen in NVLD.

Children with Asperger and NVLD are frequently defined clinically. Here we present some clues to try to define neuropsychological profiles of these pathologies.