



## *Tilley Psychological Services*

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### **Nonverbal Learning Disabilities**

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### **General Information**

A nonverbal learning disability (NLD) is characterized by a group of verbal, visual-spatial and socio-emotional characteristics that generally present a typical pattern of assets and deficits, along with a predictable pattern of development over time. An NLD is presumed to result from neurological impairment and may sometimes be associated with congenital conditions such as Fetal Alcohol/Drug Syndrome, Turner's Syndrome, Asperger's Syndrome, Congenital Hypothyroidism and Multiple Sclerosis, as well as traumatic brain injury. Research into this area is relatively new and ongoing, and the NLD pattern is not completely defined. Keep in mind when reading about NLD (or any learning or attention disorder, for that matter) that not everyone with the condition has all or the same features of the syndrome.

Early identification and differential diagnosis of such a disability is important, since the profile of weaknesses and assets change over time - remediation efforts applied to some skills may not be necessary and, in some cases, may be counterproductive. The following is a brief overview of the NLD syndrome, as well as some of the developmental characteristics.

Young children with NLD may experience delays in their language skills, but then

speech development "takes off" and they very quickly progress to the use of age appropriate speech patterns. In fact, many become quite verbal and as preschoolers are perceived as being intellectually gifted. (This can cause quite a bit of shock and pain for parents when the NLD child reaches early elementary years and is diagnosed with a learning disability.) However, the behaviour of an NLD child differs from that of a bright and curious child - these children also ask many questions, but they also want to explore their world through handling things, looking at them, and tasting them.

In contrast to speech skills, walking and motor coordination skills develop later than average age and may never catch up to an age appropriate level. As young toddlers, these children often present as passive, although some are hyperactive, and they are often clumsy. Younger children with NLD may present as having ADHD (and they can have both NLD and ADHD), but often the level of activity decreases during early school years. However, the attention/concentration problems may continue, particularly with regard to attention for visual or tactile information. As the children reach an age when fine motor skills begin to become more important, significant delays in fine motor skills generally become apparent. Children with an NLD often demonstrate a dislike of activities that require fine motor coordination.

Children with an NLD tend to have poor eye contact, and poor recognition of social cues. (I am fond of telling people that they cannot know what the person's face is showing if they are not looking at it!) As a result, they have difficulty interacting with other children, they "intrude" into personal space, and they tend to be viewed by other children as immature or "different" (insert your own insulting term here). Children with NLD are prone to being picked on and bullied, particularly boys. Children with an NLD are considered "instigators" because they intrude in the space of other children and do not back away when warned to do so. Boys interpret the failure to back away as a challenge and often respond aggressively, resulting in fights. Adults who do not understand NLD may not condone the aggression, but also have trouble understanding why the NLD child keeps "asking for it".

People with an NLD often have trouble understanding some types of humour, although they may enjoy some types (including verbally-based humour). Children with NLD also tend to be "rule- oriented", but they have trouble generalizing rules

to new situations. As a result, they tend to be socially isolated. Children with an NLD also tend to be clumsy, have difficulty with direction, react poorly to change, and have trouble acquiring self-help skills.

Teens with an NLD often become underactive, anxious, and increasingly isolated. This can lead to depression, along with a high risk of suicidal ideation and suicidal behaviours. As adults, many people with an NLD find a "niche" into which they can fit, but they often continue to be socially isolated and lonely. As well, adults continue to struggle with many academic, social, and visual-spatial deficits, although they may be able to adapt a little easier in some areas. Depending on their life circumstances, many adults will continue to struggle with anxiety and/or depression throughout their lives.

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### Academic Strengths and Weaknesses

This is a partial list of some of the more frequent difficulties:

<b>Strengths</b>	<b>Weaknesses</b>
Reading decoding	Reading comprehension
Memory for verbal information	Making inferences
Vocabulary	Generalizing and applying skills and information
Spelling	Handwriting (letter formation, although this may improve)
Attention to detail	Written composition
Simple or repetitive motor skills	Math, both computation and problem solving
	Physical Education
	Social-emotional development
	Complex motor skills
	Visual-motor integration

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## Assessment

Byron Rourke, the psychologist who has basically put NLD "on the map" (which, by the way, is a phrase that many people with NLD would have trouble understanding), recommends an extensive neuropsychological assessment to examine the profile of neuropsychological assets and deficits of NLD. As with all conditions or LDs, NLD can be quite difficult to diagnose, and in many cases a more comprehensive neuropsychological assessment is necessary. However, in many children with NLD a combination of a psychoeducational assessment with a thorough developmental history will be sufficient. It is usually easier to diagnose older children or adolescents because the pattern of development is clearer. When the developmental picture is not as clear, a complete neuropsychological assessment will be necessary.

As with other learning disabilities, an assessment for NLD must look for a characteristic pattern of development, along with the profile of strengths and weaknesses. However, relying on simple rules, such as "stronger scores on verbal tasks than nonverbal tasks" is not adequate - it is important that the person doing the assessment be familiar with learning disabilities, and NLD in particular. In addition to the usual battery of tests, some neuropsychological screening tests and a measure of adaptive behaviour are important. Measures of repetitive, obsessional, or autistic-like behaviours are included when there is a suspicion that the child might have Asperger's Disorder (which may be hard to distinguish from NLD or may also be a co-occurring condition).

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## Treatment

**Education:** It is very important for the parents and teachers of children with NLD to understand the unique pattern of strengths and weaknesses, and the expected course of development. This will allow them to understand the struggles that the child is experiencing, and to provide the appropriate supports and instruction. As the child matures into adolescence and adulthood, it will become important for that person to gain their own sense of what it means to have and NLD, and how to best cope with it.

**Academic Strategies:** The person with NLD will need specific types of interventions, and this may change over time. As well, particularly in young children,

educational remediation needs to be focused on the right tasks. For example, many children with NLD experience a delay in their ability to read (decoding), and receive a program such as Reading Recovery in Grades 1 and 2. Such children will often experience a jump in their development around age 6 or 7 so that reading decoding skills actually become a strength - this jump is developmental, and has nothing to do with the effectiveness of any particular program. If a young child is diagnosed with NLD, it may be more efficient, in the long term, to focus on comprehension strategies.

**Program Modifications:** People with an NLD will need modifications to their educational program to focus on learning math skills, writing composition, handwriting, organization, and generalization of information. There are many specific strategies to address these areas (see the "Extra Links" websites for more ideas). In general, it is best to help the person with NLD to use their strong verbal skills to come up with rules or guidelines that they can use. (Of course, with their difficulty generalizing, the first rule they need to learn is when to apply a rule!) People with an NLD also tend to do better when they are able to use technology to help them bypass issues such as poor handwriting or weak organization.

**Social-Emotional Perceptions:** All people with NLD will likely benefit from some training in social skills, social perceptions, and emotional regulation. Some of these ideas can be quite simple. For example, for those with NLD who have difficulty with eye contact, it may be helpful to teach them to look at a person's ears, or forehead. This can be a little awkward for the NLD person at first, but with reminders they can learn to do it. When looking at an area closer to the face, the NLD person is more likely to notice changes in facial expressions, which can be encoded verbally. Children will need to learn skills such as turn-taking, respecting physical boundaries, and talking with other children. Adolescents and adults will need continued focus on social interactions, as well as help negotiating the confusion of intimate relationships.

**Motor Deficits:** People with NLD tend to have low muscle tone, poor motor coordination, and difficulty with visual perception. As young children, they struggle with fine motor tasks, and as older children, they tend to be excluded from sports activities. Many people with NLD develop a sense of hopelessness about physical activities and become inactive. Children, in particular, often need the assistance of occupational therapy and/or physical therapy. People with NLD will need

encouragement to engage in physical activities, as well as assistance to develop their coordination and strength.

**Counselling:** People with NLD tend to have difficulty coping with stress and are prone to difficulties with both anxiety and depression. Low self-esteem, hopelessness, loneliness, and feelings of inadequacy are common. These people will need help understanding and addressing their emotional difficulties, learning to manage stress, and applying their skills and knowledge in new situations. Adults will also benefit from strategies to help them organize the activities of living as an independent adult.

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