

# **VISUAL SPATIAL LEARNING DIFFERENCES IN THE CLASSROOM**

*Seminar for Cascia Hall  
Preparatory School  
Tulsa, Oklahoma  
August 11-12, 2008*

*Presented by: Kevin T. Blake,  
Ph.D., P.L.C.  
Tucson, AZ*

# What Does Neurobiological Mean?

- “At present, however, the existing data argue strongly for a role of the amygdala and its collaborating cortical systems in the pathobiology of autism spectrum conditions.” (p. 197)

Schultz, R.T., Romanski, L.M. and Tsatsanis, K.D. (2000). Neurofunctional Models of Autistic Disorder and Asperger Syndrome: Clues from Neuroimaging. In A. Klin, F.R. Volkmar and S.S. Sparrow (Eds.), Asperger Syndrome. New York, NY: Guilford, pp. 178-209.

- “The field has come a long way since parents were considered to be the cause of autism spectrum disorders.” (p. 64)

Ozonoff, S., Dawson, G. and McPartland, J. (2002). A Parent's Guide to Asperger Syndrome & High Functioning Autism. New York, NY, Guilford.

# Social Disorders



- Regarding Nonverbal LD Ozonoff, et.al. (2002) wrote, “Many children with NLD have trouble reading the emotions of others and have other social difficulties...” (p. 162)

Ozonoff, S., Dawson, G., McPartland, J. (2002). A Parent's Guide to Asperger Syndrome & High Functioning Autism. New York, NY: Guilford.

# Social Disorders



- Klin and Volkmar said of adults with Asperger's Disorder, "Unless issues of social presentation and competence are adequately addressed, including what to do in specific situations such as lunch or free-time periods, the chances of vocational satisfaction are lessened." (p. 351)

**Klin, A. and Volkmar, F.R. (2000). Treatment and Intervention Guidelines for Individuals with Asperger Syndrome. In A. Klin, F. Volkmar and S.S. Sparrow (Eds.), Asperger Syndrome. New York, NY: Guilford, pp. 340-366.**

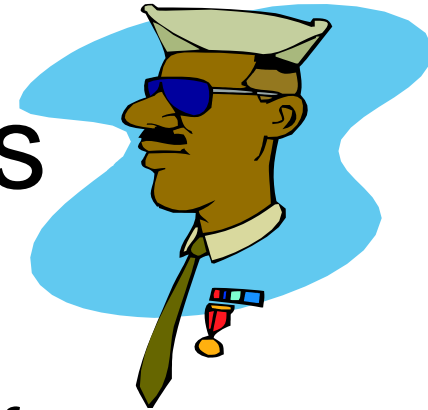


# Cerebellum and Asperger's Disorder

- There is good neuroimaging data that indicates many with Asperger's Disorder and High Functioning Autism have smaller cerebellums than and are more clumsy than the norm.

**Attwood, T. (1998). Asperger Syndrome: A Guide for Parents and Professionals. Philadelphia, PA: Jessica Kingsley.**

# Social Anxiety and Shyness



- Attwood (2002) gave an example of an Australian soldier who fought behind enemy lines as a lone sniper in Vietnam who said his social anxiety is much more pronounced than his PTSD from the war ever was.

**Atwood, T. (July, 2002). Social Skills for Children with Asperger's and High Functioning Autism. Workshop presented on July 19, 2002 in Scottsdale, AZ: Future Horizons, Inc. 721 West Abram Street, Arlington, TX 76013.**

# *Autism is NOT New!*

“People have probably lived with what we know today as autism spectrum disorders throughout history. Some of the earliest published descriptions of behavior that sounds like autism date back to the 18th century. But the disorder did not have a name until the middle of the 20th century.”

Centers for Disease Control and Prevention. Autism Information Center.  
<http://www.cdc.gov/ncbddd/autism/overview.htm#is>

# *Autism's Prevalence*

“CDC’s Autism and Developmental Disabilities Monitoring (ADDM) Network released data in 2007 that found about 1 in 150 8-year-old children in multiple areas of the United States had an ASD.”

Centers for Disease Control and Prevention. Autism Information Center.  
[http://www.cdc.gov/ncbddd/autism/faq\\_prevalence.htm#whatisprevalence](http://www.cdc.gov/ncbddd/autism/faq_prevalence.htm#whatisprevalence)

# *Learning Disorders*

- Rourke broke down Learning Disorders into two groups:
  1. Basic Phonological Processing Disorders
  2. Nonverbal Learning Disorders

Rourke, B.P. (2006). Question #1: You refer to NLD as a subtype of Learning Disabilities (LD). How do you define LD? From Website: [www.nld-bprourke.ca/BPRA1.html](http://www.nld-bprourke.ca/BPRA1.html)



# *Rourke's NVLD Syndrome*

- Good single word decoding when compared to mechanical arithmetic skills
- Better verbal than non-verbal social interaction
- Before age 4 may appear relatively normal
- As young child may be seen as “hyperactive”
- As older child may be seen as either “hypo” or “hyper” active, withdrawn, anxious and depressed
- Atypical behaviors and social skills deficits.

Rourke, B.P. (2006). Question # 1: You refer to NLD as a subtype of Learning Disabilities (LD). How do you define LD? From Website: [www.nld-bprouke.ca/BPRA1.html](http://www.nld-bprouke.ca/BPRA1.html) .

# *NVLD Categories of Dysfunction*

- **Motoric:** Slow motor reaction time, problems crossing the midline, left side weakness
- **Visual-Spatial-Organizational:** It is hard enough to cope when they know what to expect; novelty makes it worse.
- **Social:** They have no idea of personal space, when to stop, facial expressions and nonverbal signs of pleasure/displeasure.

Thompson, S. (1997). The Source for Nonverbal Learning Disorders. East Moline, IL: LinguiSystems.

# NVLD Dysfunctions

- “This child learns little from experience or repetition and is unable to generalize information, so he doesn’t apply past learning to new situations.” (p. 13)
- If they cannot learn vicariously, by watching someone model a behavior, and you must directly teach them everything verbally that is a **RED FLAG** something is wrong!

Thompson, S. (1997). The Source for Nonverbal Learning Disorders. East Moline, IL: LinguiSystems, p. 13.

# NVLD Dysfunctions

“Tossing in a new variable to an already fairly consistent situation (such as a substitute teacher over control of a classroom where the child has previously gained a certain degree of stability with his regular teacher), can totally disrupt this child’s coping strategies and generate an increased level of anxiety for him.” (p. 33)

Thompson, S. (1997). The Source for Nonverbal Learning Disorders. East Moline, IL: LinguiSystems.

# Nonverbal Learning Disorder (NVLD)



- Approximately 80% of those with Learning Disorders have Reading Disorder/Dyslexia. (Shaywitz, 2003)
- 1-2% of population have NVLD exclusively and about 30% have “Mixed” language LD and NVLD. (Berg and Stockdale, 2000)

**Shaywitz, S. (2003). Overcoming Dyslexia. New York, NY: Knopf.**

**Berg, M. and Stockdale, C. (2000). Teaching the Language of Space & Time. Paper presented at the International Dyslexia Association 51<sup>st</sup> Annual Conference, November 8-11, 2000, Washington, DC.**



# Nonverbal Learning Disorder

- Rourke indicated that about 10% of those diagnosed with Learning Disorders have NVLD.
- He stated Dutch research indicated the same.

Rourke, B.P. (2006). Question #1: You refer to NLD as a subtype of Learning Disabilities (LD). How do you define LD? From Website: [www.nld-bprouke.ca/BPRA1.html](http://www.nld-bprouke.ca/BPRA1.html)

# Nonverbal Learning Disorders (NVLD)

- Five to ten percent of the LD population have NVLD.
- Sixty percent of those with NVLD have comorbid AD/HD.
- “Social Competence Disorder”

Semrud-Clikeman, M. (October 26, 2006). AD/HD and Co-morbidity: Aspergers, Autism Spectrum and Nonverbal Learning Disabilities. Paper presented at the Pre-Conference Institutes of the 18<sup>th</sup> Annual CHADD International Conference, Chicago, IL.

# *Nonverbal Learning Disorders*

- Those are poor at analysis and synthesis of information better at serial information processing and rote memory.
- Some see NVLD and Asperger's Disorder as a Right Hemisphere disorder.

Rourke, B. P. (Ed.). (1995). Syndrome of Nonverbal Learning Disabilities: Neurodevelopmental Manifestations. New York: Guilford Press.

# *Symptoms of NVLD*

- Verbal IQ typically higher than Performance IQ
- Remarkable early language development
- Excellent rote memory
- Hyper-attention to detail
- Often excellent reading skills
- Remarkable verbal expression
- Poor Coordination

Rourke, B. P. (Ed.) (1995). Syndrome of Nonverbal Learning Disabilities: Neurodevelopmental Manifestations. New York: Guilford.

# *Symptoms of NVLD*

- Profound balance difficulties
- Fine motor difficulties
- Poor visual imagery
- Poor spatial processing
- Poor nonverbal social communication interpretation
- Poor transition and new situation tolerance
- Poor social judgment and interactions

Thomson, S. (1997). The Source for Nonverbal Learning Disorders. East Moline, IL: LinguiSystems, p. 15





# Visual-Spatial Problems

- “Spatial relations include qualities like size, distance, volume, order and time.” (p.1)
- There are two types of spatial skills. Visual-spatial performance refers to using sight to discriminate differences. Motor-spatial performance refers to making the body move accurately and smoothly. Of course, many activities demand some combination of the visual-spatial and motor-spatial skill.” (p. 5)

Stockdale, C. & Possin, C. (2001). Spatial Relations and Learning. Web sight: [www.Newhorizons.org/spneeds\\_arkspatial.html](http://www.Newhorizons.org/spneeds_arkspatial.html) , pp.1-24.

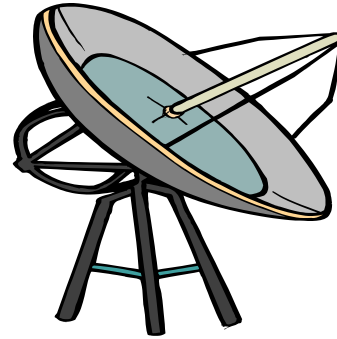


# Visual-Spatial Problems

- Difficulties with temporal and spatial relationships are related to problems in the right hemisphere. People with such difficulties have problems with processing information that is nonverbal in nature.

Berg, M. & Stockdale, C. (2001). The Language of Space and Time. Paper presented at the 52<sup>nd</sup> International Dyslexia Association International Conference, Albuquerque, NM, October 24-27, 2001. Convention Recordings, Inc. – [www.conventionrecordings.com](http://www.conventionrecordings.com) ; St. Petersburg, FL, Session S-168.

# Auditory NVLD?



- Bellis (2002) wrote about how a person with NVLD may experience a subtype of Central Auditory Processing Disorder (CAPD) which causes problems in processing tone of voice and paralanguage and not the discrimination of speech sounds. This is also a right hemisphere problem.

**Bellis, T.J. (2002). When the Brain Can't Hear: Unraveling The Mystery of Auditory Processing Disorder. New York, NY: Atria.**

## *What's In A Name?*

- Clinical Psychologist & Psychiatrist – Asperger's Disorder and/or High Functioning Autism
- Neuropsychologist & Behavioral Neurologist – Nonverbal Learning Disorder and/or Right Hemisphere Disorder (“Right Hemi Disorder”)
- Speech Language Pathologist: Semantic Pragmatic Disorder of Speech
- Occupational Therapist: Sensory Integration Disorder

Berg, M. and Stegeman, T. (November, 1995). Workshops Presented at the International Conference of the Orton Dyslexia Society, Houston, TX.

## *What's In A Name?*

“Asperger’s is mild autism with language.”  
(Ratey, 1997)

Ratey, J. (May, 1997). Shadow Syndromes. Paper presented at the 3<sup>rd</sup> Annual National ADDA Adult ADD Conference, May 17, 1997, St. Louis, MO.

Berg and Stegeman (1995) see Asperger’s Disorder and Nonverbal Learning Disorder as two separate types of disorders. They see Asperger’s individuals as having more autistic-like difficulties, and visual-spatial processing problems, whereas, those with nonverbal LD have visual-spatial problems alone.

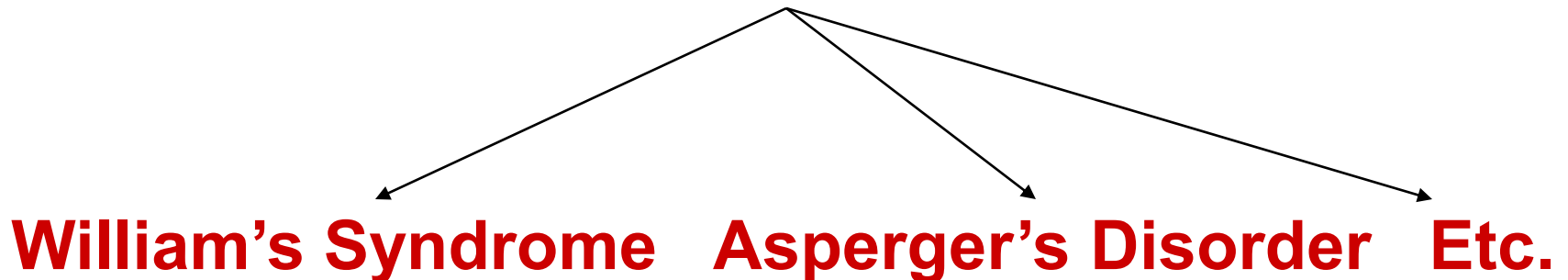
Berg, M. and Stegeman, T. (November, 1995). Workshops Presented at the International Conference of the Orton Dyslexia Society, Houston, TX.



# *What's In A Name?*

Volkmar, et al (1996) and Rourke (1995) believe Asperger's Disorder is a subcategory of Nonverbal Learning Disability.

## **Nonverbal Learning Disorder**



Volkmar, F, Klin, A., Schultz, R., Bronen, R., Marans, W.D., Sparrow, S., and Cohen, D. (1996). Grand Rounds in Child Psychiatry: Asperger Syndrome. Journal of the American Academy of Child and Adolescent Psychiatry, 35 (1), pp. 118-123.

## *Asperger's Disorder Symptoms (1990's)*

- “Paucity of empathy
- Naïve, inappropriate, one-sided social conversation, isolation, little ability to form relationships
- Pedantic monotonic speech
- Poor nonverbal communication
- Intense absorption in circumscribed topics, such as the weather, facts about TV stations...
- Clumsy, ill-coordinated movements and odd posture.” (p. 8)

Volkmar, F. and Klin, A. (July-August, 1994). Autism and Asperger's Syndrome. LDA Newsbriefs, p. 8.

## *Issues of Diagnosis*

- Voeller (1995) wrote, “Trying to make a diagnosis of right-hemisphere deficit syndrome without neuropsychological data would be akin to making a diagnosis of epilepsy in the absence of electro-encephalographic (EEG) information.” (p. S17)
- Voeller (1995) continued that many with Asperger’s Disorder are labeled AD/HD and they may have problems with Obsessive Compulsive Disorder and/or depressive symptoms.

Voeller, K.K.S. (1995). Clinical Neurological Aspects of the Right-Hemisphere Deficit Syndrome. Journal of Child Neurology, 10 (Supplement Number 10), pp. S16-S22.

# *NVLD VS Asperger's Disorder*

“There is strong evidence to suggest that individuals with AS present with virtually all the characteristics of NLD. Most important, this neuropsychological phenotype may offer a basis from which to draw a distinction between AS and HFA.” (p. 248-249)

Rourke, B.P. and Tsatsanis, K.D. (2000). Nonverbal Learning Disabilities and Asperger Syndrome. In A. Klin, F. Volkmar, and S. Sparrow (Eds.), Asperger Syndrome. New York, NY: Guilford, pp. 231-253.

# *Your Tax Dollars at Work*

## National Institutes of Health

National Institute of Child Health and Development (NICHD)

[www.nichd.nih.gov/autism/](http://www.nichd.nih.gov/autism/)

Alice Kau, Ph.D.

[www.kaua@mail.nih.gov](mailto:www.kaua@mail.nih.gov)

## Autism Research Network

[www.autismresearchnetwork.org/AN/default.aspx](http://www.autismresearchnetwork.org/AN/default.aspx)

- The Collaborative Program of Excellence in Autism
- Studies to Advance Autism Research and Treatment

## *Attwood's Continuum of the Autism Spectrum*

1. Aloof- Child has little or no speech, self-stimulates a lot. Looks like classic autism, child may stay at this level for entire life or move on to next level of continuum. Upset by being close to others.
2. Passive- They interact with others to get what they want. They engage in solitary play and/or have some limited speech. May have internal speech, echolalia. Need external prompt to speak. Interest in symmetry, and collect odd things (e.g., dust bunnies, etc.). Rule following. May stay at this stage or move to level 3.

## *Attwood's Continuum of the Autism Spectrum (Continued)*

3. Active, but odd- These children seek attention, they like it. They do strange repetitive behaviors to get attention, but once they have your attention they don't know what to do. Speech typically includes repetitive questions they know the answer to. Do not interact with peers. Focus on one interest-often transportation.

Attwood, T. (1999). Asperger's Syndrome: A Guide for Parents and Professionals. Videotaped Presentation. Arlington, TX: Future Horizons.

# *Attwood's Continuum of the Autism Spectrum (Continued)*



Attwood, T. (1999). Asperger's Syndrome: A Guide for Parents and Professionals. Videotaped Presentation. Arlington, TX: Future Horizons.



# *Attwood on Asperger's Disorder, HFA and Nonverbal Learning Disability*

“They are exactly the same. They are just spelled differently” (Tony Attwood, Ph.D.)

**High Functioning Autism = Asperger's  
Disorder**

**Asperger's Disorder = Nonverbal  
Learning  
Disorder**

Attwood, T. (1999). Asperger's Syndrome: A Guide for Parents and Professionals. Videotaped Presentation. Arlington, TX: Future Horizons.

# *Ozonoff, Dawson & McPartland on Asperger's Disorder*

Autism: the most common of the PDDs, ranging in severity from those who are very handicapped (nonverbal, totally aloof, and highly repetitive) to those who are only mildly socially awkward, and slightly unusual in their conversational style, and have special interests.” (p. 9)

Ozonoff, S., Dawson, G. and McPartland, J. (2002). A Parent's Guide to Asperger Syndrome & High Functioning Autism. New York, NY: Guilford, p. 9.

# *Ozonoff, Dawson & McPartland on Asperger's Disorder*

“The high-functioning autism spectrum disorders include:

high-functioning autism: The child fits the definition of autism but has normal cognitive and learning abilities. The child may have had difficulty acquiring language, but eventually was able to speak at a level close to what is expected for his or her age.” (p. 9)

Ozonoff, S., Dawson, G. and McPartland, J. (2002). A Parent's Guide to Asperger Syndrome & High Functioning Autism. New York, NY: Guilford, p. 9.

# *Ozonoff, Dawson & McPartland on Asperger's Disorder*

“Asperger syndrome: The child is similar to those with high-functioning autism, but has fewer symptoms and had little or no difficulty developing language at the normal age.” (p. 9)

Ozonoff, S., Dawson, G. and McPartland, J. (2002). A Parent's Guide to Asperger Syndrome & High Functioning Autism. New York, NY: Guilford, p. 9.)

# *Smith Myles and Simpson on Asperger's Disorder*

“Unlike other children with autism, however, they generally had normal intellectual and communication development, leading Asperger to infer that individuals with this disorder represented a distinct and independent diagnostic classification.” (p.1)

Smith Myles, B. and Simpson, R.L. (1998). Asperger Syndrome: A Guide for Educators and Parents. Austin, TX: ProED.

# *Epidemiology of Asperger's Disorder*

- 71 out of 10,000 live births will have AD.
- “Autism spectrum disorders affect up to 0.6% of the population, and two-thirds to three quarters of those children appear to be high-functioning.” (p. 9)
- AD will occur 2 to 3 times more often in males than females.

Gillberg, C. (1993). Autism and Related Disorders. Journal of Intellectual Disability Research, 37, pp. 343-372.

Ozonoff, S., Dawson, G. and McPartland, J. (2002). A Parent's Guide to Asperger Syndrome & High Functioning Autism. New York, NY: Guilford, p. 9.

Smith Myles, B. and Simpson, R.L. (1998). Asperger Syndrome: A Guide for Educators and Parents. Austin, TX: ProED.

# *High Functioning Autism*

- “This is the term used for children who meet autistic disorder criteria but have relatively normal thinking and learning skills (that is, they are not mentally retarded) and language skills (they can speak close to the level expected for their age).” (p. 29)
- HFA- often have visual-spatial strengths

Ozonoff, S., Dawson, G. and McPartland, J. (2002). A Parent's Guide to Asperger Syndrome & High Functioning Autism. New York, NY: Guilford, p. 29.

# *High Functioning Autism*

- Often have repetitive movements (i.e., rocking, flapping, etc.)
- Often have PIQ > VIQ

Ozonoff, S., Dawson, G. and McPartland, J. (2002). A Parent's Guide to Asperger Syndrome & High Functioning Autism. New York, NY: Guilford.



# Asperger's Disorder

- Do not have communication difficulties- language “normal” by age 3
- Have FSIQ over 70
- VIQ > PIQ often
- Fail to meet autism diagnostic criteria
- Better at “**Theory of Mind**” than those with HFA
- Often very clumsy
- Often have “obsessive topics” (i.e., dust bunnies, etc.)

Ozonoff, S., Dawson, G. and McPartland, J. (2002). A Parent's Guide to Asperger Syndrome & High Functioning Autism. New York, NY: Guilford.

## HFA VS AD

- The practical significance between the two diagnoses may be minor because the treatment is often the same.

Ozonoff, S., Dawson, G. and McPartland, J. (2002). A Parent's Guide to Asperger Syndrome & High Functioning Autism. New York, NY: Guilford.

## HFA VS AD

“We now know that autism is not a narrowly defined condition, but rather a spectrum that varies in severity from the classic picture described by Leo Kanner to the milder varieties associated with good language and cognitive (thinking) skills. For this reason, we now use the term ***autism spectrum disorders***.”

Ozonoff, S., Dawson, G. and McPartland, J. (2002). A Parent's Guide to Asperger Syndrome & High Functioning Autism. New York, NY: Guilford, p. 5.

## HFA VS AD

- 20 years of research has demonstrated there are few differences between High Functioning Autism and Asperger's Disorder.

Ozonoff, S., Dawson, G. and McPartland, J. (2002). A Parent's Guide to Asperger Syndrome & High Functioning Autism. New York, NY: Guilford.

# *What Causes Autism Spectrum Disorders?*

“Scientists do not yet have complete answers to these questions, but very strong evidence suggests that autism spectrum disorders are biological in origin and are not caused by parenting or other psychosocial environmental causes. Differences in the size and organization of the brain, as well as how it works, in individuals with autism spectrum disorders versus normal individuals have been found.”

Ozonoff, S., Dawson, G. and McPartland, J. (2002). A Parent's Guide to Asperger Syndrome & High Functioning Autism. New York, NY: Guilford, p. 56-57.

# *What Causes Autism Spectrum Disorders?*

- Too many cells in the limbic system: Social-emotional behavior
- Small cerebellar vermis: motor coordination and cognitive activities
- Large ventricles
- Amygdala smaller, cells more densely packed: Emotions and facial recognition
- 1/4 have brains and heads significantly larger than “normals”: Less pruning

Ozonoff, S., Dawson, G. and McPartland, J. (2002). A Parent's Guide to Asperger Syndrome & High Functioning Autism. New York, NY: Guilford.

# Brain Areas Related to Social Interaction

Schultz and Klin (in press) indicated the following brain areas control the following social behaviors:

**Frontal lobe**: Theory of mind and social perception

**Hypothalamus**: Maternal behavior

**Amygdala**: Arousal, emotional learning, social orienting, recognition of emotional significance

**Fusiform gyrus**: Face perception

**Temporal lobe**: Interpretation of biological movement, recognition of facial expressions

Schultz, R.T. & Klin, A. (in press). Social Systems of the Brain: Evidence From Autism and Related Disorders. Philosophical Transitions of the Royal Society, Series B. (taken from: Ozonoff, S., Dawson, G. and McPartland, J. (2002). A Parent's Guide to Asperger Syndrome & High-Functioning Autism. New York, NY: Guilford, p. 58.

# Brain Areas Related to Social Interaction



- Voeller believed all the above mentioned systems are located in their own specific brain areas.
- Impairment in one area does not necessarily mean impairment in other areas.

**Voeller, K.K.S. (1995). Clinical Neurological Aspects of the Right-Hemisphere Deficit Syndrome. Journal of Child Neurology, 10 (Supplement Number 1), pp. S16-S22.)**



## *Genetics and Autism Spectrum Disorders*

- Human Genome Project Suspect Chromosomes: 7 & 15
- Genes on Chromosome 16 have been linked to Autism and AD/HD – 60 to 70% of Autism is Genetic
- Replication study indicates Chromosome 17q21 linked to Autism
- Autism and possibly Asperger's Disorder susceptibility genes on Chromosomes 2, 7, 16, 17

Ozonoff, S., Dawson, G. and McPartland, J. (2002). A Parent's Guide to Asperger Syndrome & High Functioning Autism. New York, NY: Guilford.

Page, D. (October 22, 2002). UCLA Geneticists Find Location of Major Gene in ADHD; Targeted Region Also Linked to Autism. UCLA News, [www.newsroom.ucla.edu/page.asp?id=3612](http://www.newsroom.ucla.edu/page.asp?id=3612) .

Cantor, R.M., Kono, N., Duval, J.A., Alvarez-Retuerto, A., Stone, J.L., Alarcon, M., Nelson, S.F. and Geschwind, D.H. (2005). Replication of Autism Linkage: Fine-Mapping Peak at 17q21. American Journal of Human Genetics, 76 (6), pp. 1050-1056:  
[www.journals.uchicago.edu/AJHG/journal/issues/v76n6/42136.html](http://www.journals.uchicago.edu/AJHG/journal/issues/v76n6/42136.html) .

Author (2001). Autism Susceptibility Genes on Chromosomes 2, 7, 16, 17. UniSci Daily University Science News: [www.unisci.com/stories/200113/0807015.htm](http://www.unisci.com/stories/200113/0807015.htm) .

# Why do those with NVLD and Asperger's say disrespectful things?

– “For a fat lady you don't sweat much.”

-Child who worked with C. Wilson Anderson, Jr.

It is important to understand that this 'rude' behaviour is motivated neither by a wish to offend or hurt others, nor to be disrespectful to adults or authorities.” (Rourke, p. 1 of 1)

Rourke, B. (2008). Questions and Answers: Question 22. From: [www.nld-bprouke.ca/BPRA22.html](http://www.nld-bprouke.ca/BPRA22.html).

# Why do those with NVLD and Asperger's say disrespectful things?

- “They do not, for example, automatically empathize with others or understand that other people may think and feel other things. They often cannot understand what others might feel when they deliver blunt, negative comments. For persons with NVLD, their statements reflect ‘reality’ or the truth.” (Rourke, p. 1 of 1)
- They do not understand “white lies”.

Rourke, B. (2008). Questions and Answers: Question 22. From: [www.nld-bprouke.ca/BPRA22.html](http://www.nld-bprouke.ca/BPRA22.html).

# Why do those with NVLD and Asperger's say disrespectful things?

“ ...NVLD can also undermine knowledge of social conventions. Well-functioning people learn how to act appropriately in certain situations, such as a classroom, playground, a religious service, or a library. They also learn how to act towards those in certain key rolls, such as a teacher, a boss, parent, or friends. Individuals with NVLD often do not understand these conventions, and so do not tailor their behavior to the situation.” (Rourke, p. 1 of 1)

Rourke, B. (2008). Questions and Answers: Question 22. From: [www.nld-bprouke.ca/BPRA22.html](http://www.nld-bprouke.ca/BPRA22.html).

# Why do those with NVLD and Asperger's say disrespectful things?

- Those with NVLD are easily duped by others into saying disrespectful things.
- Make sure they were not tricked into saying something disrespectful to you.

Attwood, T. (2007). The Complete Guide to Asperger's Syndrome. Philadelphia, PA: Jessica Kingsley.

# Why do those with NVLD and Asperger's say disrespectful things?

***“Bottom line: It is important to understand the social deficits underlying specific behaviours and to teach the skills that will allow the individual with NVLD to avoid alienating people in this manner.”  
(Rourke, p. 1 of 1)***

Rourke, B. (2008). Questions and Answers: Question 22. From: [www.nld-bprouke.ca/BPRA22.html](http://www.nld-bprouke.ca/BPRA22.html).

# Treatment of Visual-Spatial Processing Disorders



- “When Britt could talk through the task, she was successful even with space and time...Verbally mediated. Yes! Britt was at a loss when she could not talk her way through space and time tasks. That must be a key!” (Stockdale; From: Neff, Lippman-Neff and Stockdale, 2002, p. 54).

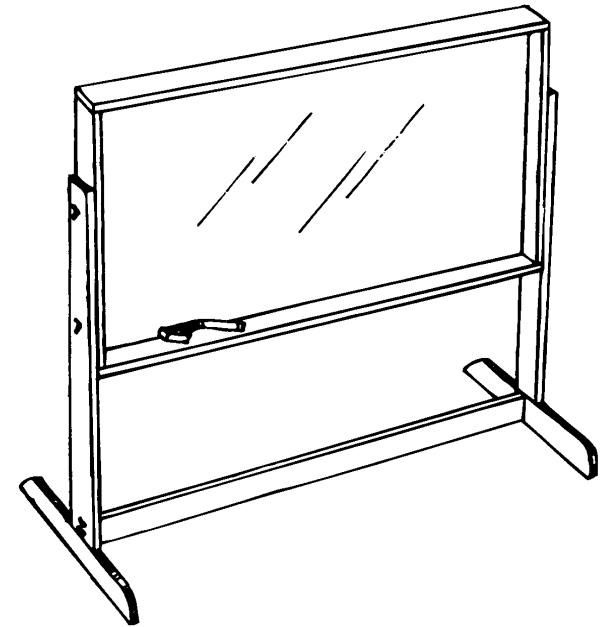
**Neff, B., Neff-Lippman, J. and Stockdale, C. (2002). The Source for Visual-Spatial Disorders. East Moline, IL: LinguSystems.**

# ARK Foundation's Learning Window

Neff, B., Neff-Lippman, J. and Stockdale, C. (2002). The Source for Visual-Spatial Disorders. East Moline, IL: LinguSystems, p. 176.

ARK Institute of Learning:

[www.arkinst.org](http://www.arkinst.org)

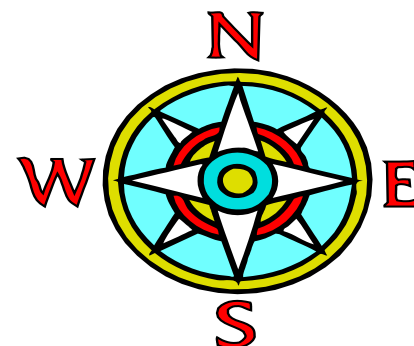
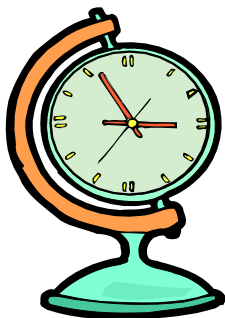




# NVLD/Asperger's Suggestions

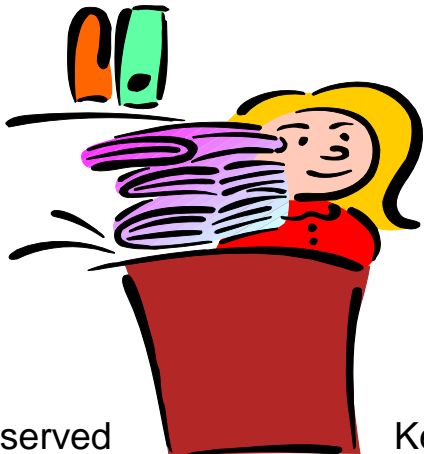
- “Children with temporal and spatial problems need to be taught the language of time and space, syntax, the vocabulary of position and direction, map and clock reading.”

Berg, M. & Stockdale, C. (2001). The Language of Space and Time. Paper presented at the 52<sup>nd</sup> International Dyslexia Association International Conference, Albuquerque, NM, October 24-27, 2001. Convention Recordings, Inc. – [www.conventionrecordings.com](http://www.conventionrecordings.com); St. Petersburg, FL, Session S-168.



# Excellent Resource on NVLD Treatment

- Neff, B., Neff-Lippman, J. and Stockdale, C. (2002). The Source for Visual-Spatial Disorders. East Moline, IL: LinguiSystems.



# *How to Help the NVLD Child in the Classroom*

- For the student who gets lost on the way to the classroom and is tardy:
  - Provide a verbal and visual map of the school
  - Assign a student to be their helper
  - Train the helper to look out for the schoolmate
  - Eliminate detention for tardiness for student for a period of time
  - Practice going from class to class and provide verbal landmarks.

Thompson, S. (1996). Neurobehavioral Characteristics Seen in the Classroom: Developing an Educational Plan for the Student with NLD. From NLD on the Web: [www.nldontheweb.org/thompson-5.htm](http://www.nldontheweb.org/thompson-5.htm) .

# *How to Help the NVLD Child in the Classroom*

- Problems with transitions and routine changes:
  - Provide a predictable, safe, consistent classroom routine
  - Minimize transitions and give several verbal warnings hours before transition
  - Furnish the student a written schedule of their day so they can prepare for it the night before
  - Provide landmarks.

Thompson, S. (1996). Neurobehavioral Characteristics Seen in the Classroom: Developing an Educational Plan for the Student with NLD. From NLD on the Web: [www.nldontheweb.org/thompson-5.htm](http://www.nldontheweb.org/thompson-5.htm) .

# *How to Help the NVLD Child in the Classroom*

- Has difficulty generalizing previously learned knowledge:
  - Never expect the student has automatically generalized concepts
  - Use language as a bridge to tie new situations to old learning
  - Review past learning and tie it to new learning; point out connections, comparisons and contrasts
  - Methodically discuss cause-and-effect relationships with student

Thompson, S. (1996). Neurobehavioral Characteristics Seen in the Classroom: Developing an Educational Plan for the Student with NLD. From NLD on the Web: [www.nldontheweb.org/thompson-5.htm](http://www.nldontheweb.org/thompson-5.htm) .

# *How to Help the NVLD Child in the Classroom*

- Difficulty remembering multi-step directions:
  - Write out/audio record directions
  - Number and present directions in sequence
  - Break down big tasks into several smaller ones
  - Make sure the student comprehends directions; beyond parroting them back.
  - Have someone remind the student
  - Teach the student memory tricks
  - Monitor the student periodically to insure they are not lost.

Thompson, S. (1996). Neurobehavioral Characteristics Seen in the Classroom: Developing an Educational Plan for the Student with NLD. From NLD on the Web: [www.nldontheweb.org/thompson-5.htm](http://www.nldontheweb.org/thompson-5.htm)

# *How to Help the NVLD Child in the Classroom*

- Thinks literally:
  - Explain aloud in words the things you mean that may be misinterpreted
  - Simplify and breakdown abstract concepts
  - Start with concrete concepts and slowly move to abstract
  - Metaphors, emotional nuances, multiple meanings need to be explained concretely
  - Teach the student to say, “I am not sure what you mean”, when they are confused.

Thompson, S. (1996). Neurobehavioral Characteristics Seen in the Classroom: Developing an Educational Plan for the Student with NLD. From NLD on the Web:  
[www.nldontheweb.org/thompson-5.htm](http://www.nldontheweb.org/thompson-5.htm)

# *How to Help the NVLD Child in the Classroom*

- Asks too many questions:
  - Answer the student's questions when possible and practical
  - Start the other students on the assignment and individually answer the NVLD student's questions.
  - Designate a specific period of time everyday the student can ask questions.
  - Specifically teach the student how to know when it is appropriate to ask for help.
  - Specifically teach the student to politely ask a question

Thompson, S. (1996). Neurobehavioral Characteristics Seen in the Classroom: Developing an Educational Plan for the Student with NLD. From NLD on the Web:  
[www.nldontheweb.org/thompson-5.htm](http://www.nldontheweb.org/thompson-5.htm)



# *How to Help the NVLD Child in the Classroom*

- The student is easily overwhelmed:
  - Diffuse frustrating situations early on
  - Minimize environmental stimuli; especially, visual and tactile
  - When student is overwhelmed provide them with a place to calm down, i.e. teacher's lounge, a corner in an office; not punishment
  - Allow the student to opt out of activities in which they become overstimulated
  - Modify schedule to lessen load

Thompson, S. (1996). Neurobehavioral Characteristics Seen in the Classroom: Developing an Educational Plan for the Student with NLD. From NLD on the Web:  
[www.nldontheweb.org/thompson-5.htm](http://www.nldontheweb.org/thompson-5.htm)

# *How to Help the NVLD Child in the Classroom*

- The student may have heightened sensory experience:
  - Eliminate known sensory stressors (i.e., loud clock, fan, etc.)
  - Reduce distractions
  - Talk to student in a low whisper if he/she has hyperacusis (See hyperacusis section)
  - Place student in class where there is the least distraction and auditory and visual stimuli

Thompson, S. (1996). Neurobehavioral Characteristics Seen in the Classroom: Developing an Educational Plan for the Student with NLD. From NLD on the Web:

[www.nldontheweb.org/thompson-5.htm](http://www.nldontheweb.org/thompson-5.htm)

# *How to Help the NVLD Child in the Classroom*

- Such students often have stress and anxiety difficulties:
  - Prepare the student for all transitions and novel situations far in advance
  - Make their day predictable, consistent and routine
  - Avoid surprises
  - Allow the student to leave stressful situations-give them a safe room where they can regroup and calm down-give them permission to go there when they need to

Thompson, S. (1996). Neurobehavioral Characteristics Seen in the Classroom: Developing an Educational Plan for the Student with NLD. From NLD on the Web:  
[www.nldontheweb.org/thompson-5.htm](http://www.nldontheweb.org/thompson-5.htm)

# *How to Help the NVLD Child in the Classroom*

- Avoid the “Illusion of Competency:”
  - Although such students often appear to have knowledge beyond their years they are still not adults, and these students have extreme difficulties in some areas and gifts in others. Don’t hold their strengths against them.
  - Apply age and grade expectations flexibly
  - Emphasize their strong academic skills
  - Even though the student can parrot back what you say, it doesn’t mean they comprehend it.
  - Offer explanations when the student appears lost or confused

Thompson, S. (1996). Neurobehavioral Characteristics Seen in the Classroom: Developing an Educational Plan for the Student with NLD. From NLD on the Web: [www.nldontheweb.org/thompson-5.htm](http://www.nldontheweb.org/thompson-5.htm)

# NVLD Treatment Plan for Social Skills



- Verbal Mediation of Poor Visual-Spatial Abilities
  1. Describe pictures in detail verbally
  2. Teach the relationship between objects and pictures
  3. Describe social interactions in movies
  4. Videotape child in social situation and teach from that

Rourke, B.P. (1995). Syndrome of Nonverbal Learning Disabilities: Neurodevelopmental Manifestations. New York, NY: Guilford.

# NVLD/Asperger's Suggestions

- Photographs
- Movies
- Role Playing
- Coaching with mental health back-up
- “Rent a Friend”



**Nowicki, S. and Duke, M. (2002). Will I Ever Fit In? New York, NY: Free Press.**

**Attwood, T. (1998). Asperger's Syndrome: A Guide for Parents and Professionals. Philadelphia, PA: Jessica Kingsley.**

# NVLD/Asperger's Suggestions

- Make abstract concrete
- Help with transitions
- Motivate
- Generalize:
  - Mass Practice to Learn Vs Distributed Practice - Generalization and Maintenance over time

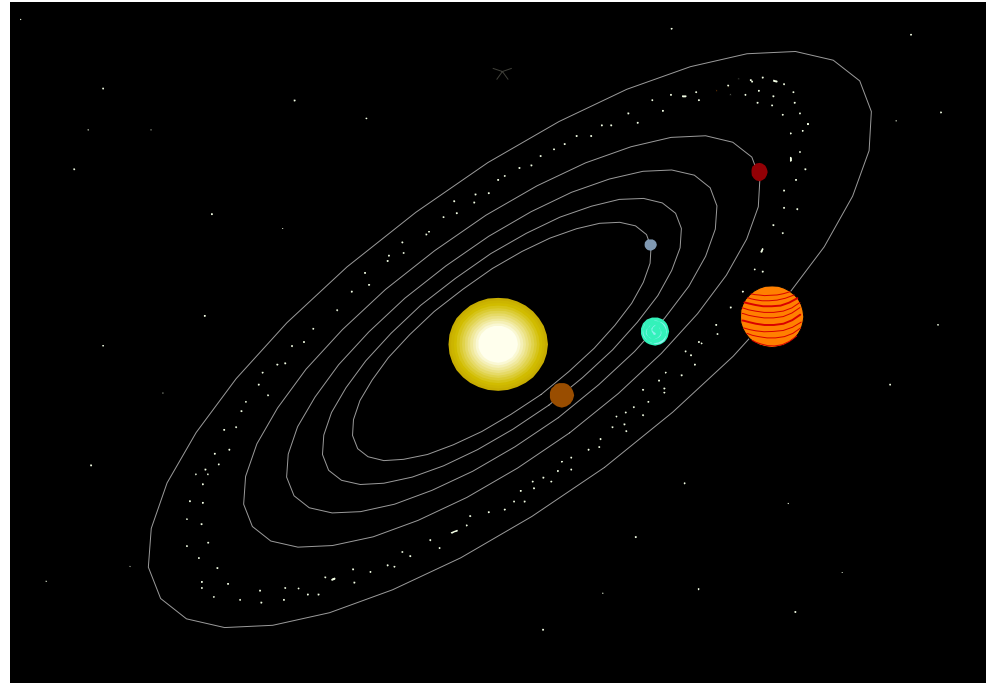


Ozonoff, S. Dawson, G., and McPartland, J. (2002). A Parent's Guide to Asperger Syndrome & High – Functioning Autism. New York, NY: Guilford.

Harrison, L. (May 12, 2006). Personal Communication.

# Social Space

- Intimate: 18 inches
- Personal: 4 feet
- Social 12 feet
- Public: 12 feet and beyond



**Nowicki, S. and Duke, M. (2002). Will I Ever Fit In? New York, NY: Free Press.**

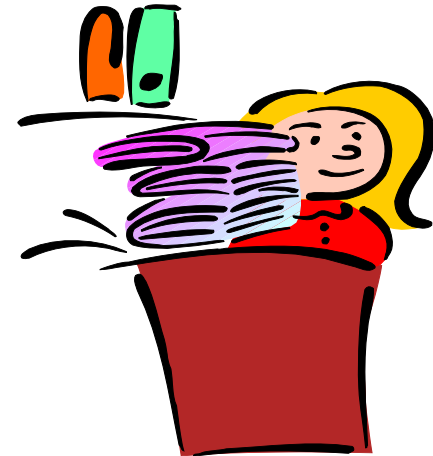


# ***Social Competence Intervention Program***

- The ***SOCIAL COMPETENCE INTERVENTION PROGRAM (SCIP)***, “...is a multisensory intervention addressing perceptual deficits that is combined with a metacognitive component to assist with generalization to classroom and play settings. It involves retraining children in the fundamentals of social perception.”

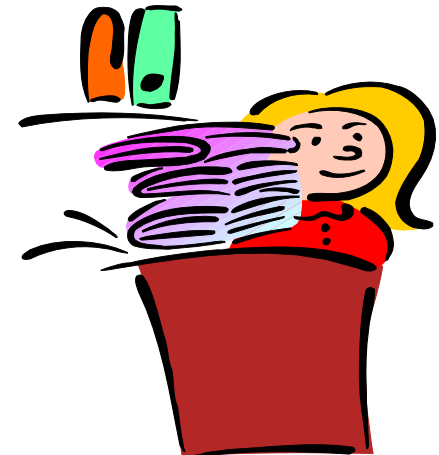
Semrud-Clikeman, M. (Spring, 2003). Executive Function and Social Communication Disorders. Perspectives, 29 (2), p. 20-22.

## **Good Social Skills Program**



# Social Competence Intervention Program

Glass, K.L., Guli, L.A. and Semrud-Clickman, M. (2000). Social Competence Intervention Program: A Pilot Program for the Development of Social Competence. Journal of Psychotherapy in Practice, 1 (4), pp. 21-33.



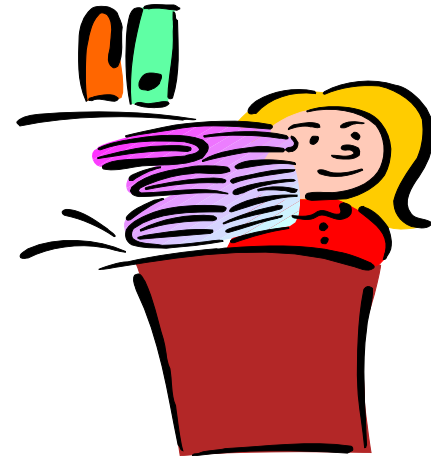
# *Great Resource For Asperger's and General Social Skills*

McAfee, J. (2002). Navigating the Social World: A Curriculum for Individuals with Asperger's Syndrome and Related Disorders. Arlington, TX: Future Horizons.

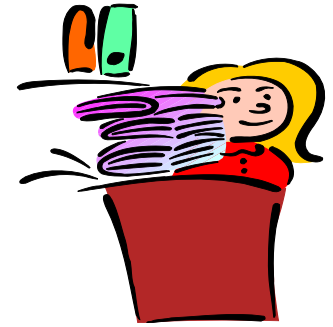


# *Great Resource for Adult AD/HD & Social Skills*

- Novotni, M. (1999). What Does Everyone Else Know That I Don't. Plantation FL: Specialty Press.
- ADDWAREHOUSE:  
[www.addwarehouse.com](http://www.addwarehouse.com)



# *Social Skills Intervention Programs*



Father Flanagan's Girls and Boys Town has done 40 years of social skills training research with many different child and adolescent populations. Many Books are available at Boy's Town Press:

- [www.boystownpress.org](http://www.boystownpress.org)
- [www.girlsandboystown.org](http://www.girlsandboystown.org)

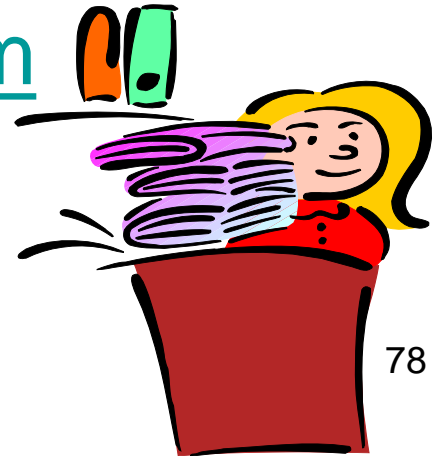
Dowd, T. and Tierney, J. (1992). Teaching Social Skills to Youth. Boys Town, NE: The Boys Town Press.

# Wilson Anderson's Social Skill Program



- **SOCIAL SKILLS DEVELOPMENT**
  - Based on ***Girls and Boys Town*** model
  - “Refrigerator Friendly”
  - Reproducible, 24 pages
  - Available from:

[www.edconsultmidwest.com](http://www.edconsultmidwest.com)



# *Asperger's Social Skills Intervention Programs*



Carol Gray's – Social Stories Unlimited- Future Horizons: [www.futurehorizons-autism.com](http://www.futurehorizons-autism.com)

Gray, C.A. (1998). Social Stories and Comic Strip Conversations With Students With Asperger's Syndrome and High-Functioning Autism. In E. Schopler, G. B. Mesibov & L. Kuncie (Eds.), Asperger's Syndrome or High-Functioning Autism. New York, NY: Plenum.

# *Good Resource On Dyssemia & Nonverbal Social Skills*

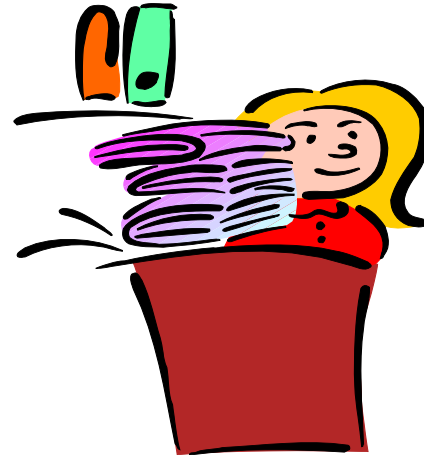
Nowicki, S. and Duke, M. (2002). Will I  
Ever Fit In? New York, NY: Free Press.





# *Good General Resource on Adults with LD and/or AD/HD*

Roffman, A.J. (2000). Meeting the Challenge  
Of Learning Disabilities in Adulthood.  
Baltimore, MD: Brookes.



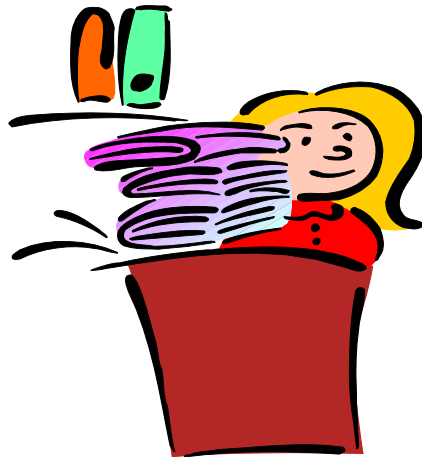
# *Good General Book on Classroom Techniques for LD and/or AD/HD Children*

Mather, N. and Goldstein, S. (2001).  
Learning Disabilities and Challenging  
Behaviors: A Guide to Intervention and  
Classroom Instruction. Baltimore, MD.  
Brookes.



# *Classic Book On Social Skills With Learning Disordered Children*

Osman, B.B. (1982). No One to Play With:  
The Social Side of Learning Disabilities.  
New York, NY: Random House.



# People Who Can Help with NVLD/Asperger's Disorder

- American Speech-Language Hearing Association:  
[www.professional.asha.org](http://www.professional.asha.org)
- Behavioral Neurologist/Neuropsychiatrists and/or Neuro-Ophthalmologist: [www.anpaonline.org](http://www.anpaonline.org) and [www.ama-assn.org](http://www.ama-assn.org)
- Mental Health Professionals
- American Occupational Therapy Association:  
[www.atoa.org](http://www.atoa.org)



# *Helpful Websites NVLD and Asperger's Disorder*

- [www.nldontheweb.org](http://www.nldontheweb.org)
- Nonverbal Learning Disability Association: [www.nlda.org](http://www.nlda.org)
- LD Online: [www.ldonline.org](http://www.ldonline.org)
- MAAP Services for Autism and Asperger's Disorder: [www.maapservices.org](http://www.maapservices.org)
- UC Davis M.I.N.D. Institute: [www.ucdmc.ucdavis.edu/MINDInstitute](http://www.ucdmc.ucdavis.edu/MINDInstitute)
- Yale Child Study Center: [www.med.yale.edu/chldstdy/autism/aspergers.html](http://www.med.yale.edu/chldstdy/autism/aspergers.html)

# *Helpful Books NVLD and Asperger's Disorder*

Ozonoff, S., Dawson, G. and McPartland, J. (2002). A Parent's Guide to Asperger Syndrome & High Functioning Autism. New York, NY, Guilford.

Neff, B., Neff-Lippman, J. and Stockdale, C. (2002). The Source for Visual-Spatial Disorders. East Moline, IL: LinguSystems.

Attwood, T. (1998). Asperger Syndrome: A Guide for Parents and Professionals. Philadelphia, PA: Jessica Kingsley.

Thompson, S. (1997). The Source for Nonverbal Learning Disorders. East Moline, IL: LinguSystems.

# *Helpful Books NVLD and Asperger's Disorder*

- Kowalski, T. (2002). The Source for Asperger's Syndrome. East Moline, IL: LinguSystems.
- Attwood, T. (2007). The Complete Guide to Asperger's Syndrome. Philadelphia, PA: Jessica Kingsley.
- Newport, J. and Newport, M. (2002). Autism-Asperger's & Sexuality: Puberty and Beyond. Arlington, TX: Future Horizons.
- Myles, B.M., Tapscott-Cook, K., Miller, N.E., Rinner, L. and Robbins, L. (2000). Asperger Syndrome and Sensory Issues: Practical Solutions for Making Sense of the World. Shawnee Mission, KS: Autism Asperger Publishing.

# *Helpful Books NVLD and Asperger's Disorder*

Kowalski, T. (2002). The Source for Asperger's Syndrome. East Moline, IL: LinguiSystems.

Attwood, T. (2007). The Complete Guide to Asperger's Syndrome. Philadelphia, PA: Jessica Kingsley.

Newport, J., and Newport, M. (2002). Autism-Asperger's & Sexuality: Puberty and Beyond. Arlington, TX: Future Horizons.

Myles, B.M., Tapscott-Cook, K., Miller, N.E., Rinner, L., and Robbins, L. (2000). Asperger Syndrome and Sensory Issues: Practical Solutions for Making Sense of the World. Shawnee Mission, KS: Autism Asperger Publishing.