SOCIAL DIFFICULTIES OF LEARNING, ATTENTIONAL AND AUTISTIC DISORDERS: SCREENING AND TREATMENT

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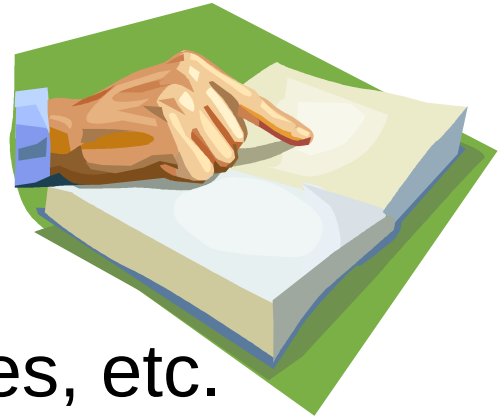
What is “State of the Art?”

- What you have in your PowerPoint manual may not exactly match mine because something new may have come out since your handouts were printed. Which bike is more “State of the Art?”

Workbook Appendix



- Helpful Resources: Books, websites, etc.
- Alternative and Integrative Medicine Treatments for LD, AD/HD, NVLD and Asperger's Disorder
- Speech and Language Disorders
- Balance and Coordination Disorders
- Hyperacusis: Super sensitive hearing
- Tactile Sensitivities: LD and AD/HD
- Synestesia: The neurological blending of two or more senses.
- Workshop Evaluation and scantron directions

SOCIAL DIFFICULTIES OF LEARNING, ATTENTIONAL AND AUTISTIC DISORDERS: SCREENING AND TREATMENT

- Dr. Blake is not going to teach you the basics of treatment planning.
- A good article on how to do “basic” treatment planning with these populations:
- ***Blake, K.T. (Fall, 2004). Improving the dyslexic child’s social skills by attending to their neurobiological differences. Perspectives, 30 (4), 6-9.***
- Available from: International Dyslexia Association website: **www.interdys.org**

In the efforts to comply with the appropriate boards/associations, I declare that I do have affiliations with or financial interest in a commercial organization that could pose a conflict of interest with my presentation.

SOCIAL DIFFICULTIES OF LEARNING, ATTENTIONAL AND AUTISTIC DISORDERS: SCREENING AND TREATMENT

Kevin T. Blake, Ph.D.

Owns shares in the following companies:

Amgen, Inc.

Johnson & Johnson, Inc.

Pfizer, Inc.

Cross Country Education

Leading the Way in Professional Development.

www.CrossCountryEducation.com

"Road Rules" and What To Expect

- 9:30 AM to 9:40 AM Break
- 11:30 AM to12:30 PM Lunch: On your own
- 2:00 PM to 2:10 PM Break
- 3:30 PM Conclusion

Please hold your questions to the Q & A times after breaks and lunch. I have 385 slides to present.

PLEASE TURN OFF YOUR CELL PHONES AND PAGERS

Another Group of Professionals that Attend My Workshops

- ***Thieves!***
  - Do not let your valuables out of your sight!
  - If you leave your seat take your laptops, cell phones, purses, etc. with you!

THE BIG QUESTION

- Skill: A behavior that is learned from the environment.
- Ability: A behavior that is biologically encoded in the brain.

What is a "Disorder?"

- A disorder is a ***harmful dysfunction*** of a naturally selected mechanism.

Wakefield, J.C. (1999). Evolutionary Versus Prototype Analysis of the Concept of Disorder. Journal of Abnormal Psychology, 108 (3), pp. 374-399.

- It must cause a dysfunction in a trait every human develops and create impairment in a major life activity.

Barkley, R.A. (2002A, Tape 1). ADHD Symposium: Nature, Diagnosis, and Assessment: Comorbidity and Developmental Course of ADHD. University of Massachusetts, January, Distributed by Stonebridge Seminars, Westborough, MA 01581.

DSM-V

- DSM-V is due to be published in 2012.
- Disorder symptoms and cutoffs will be research based for the first time.
- May be “assets based model.”
- Certain symptoms will be weighted more than others.
- Committees met for the first time in 2007.

Goldstein, S. (October 25, 2006). Advanced Treatment (Interventions) For ADHD Across The Lifespan. Paper presented at the CHADD Special Training Day prior to the 18th Annual International Conference, Chicago, IL.

What is a "Developmental Disorder?"

- A disorder characterized by a significant delay in the rate a normal human trait develops in an individual.
- It takes the individual longer to develop this trait than their age peers.

Barkley, R. A. (2002A-Tape 1). ADHD Symposium: Nature, Diagnosis and Assessment-Nature and Comorbidity and Developmental Course of ADHD. University of Massachusetts, January, Westborough, MA: Stonebridge Seminars.

What does "Neurobiological" mean?

- Stephen Pinker – "The Blank Slate: The Modern Denial of Human Nature" or better stated, "the Lie of the Blank Slate."

  Pinker, S. (2002). The Blank Slate: The Modern Denial of Human Nature. New York, NY: Viking.

- AD/HD is not caused by child rearing practices or environmental experience.

  Barkley, R. A. (2002A-Tape 1). ADHD Symposium: Nature, Diagnosis and Assessment-Nature and Comorbidity and Developmental Course of ADHD. University of Massachusetts, January, Westborough, MA: Stonebridge Seminars.

What does "Neurobiological" mean?

80 to 85% of the cases of AD/HD are genetic in origin. I.Q. is 60 to 65% genetic.

Barkley, R. A. (2002A-Tape 1). ADHD Symposium: Nature, Diagnosis and Assessment-Nature and Comorbidity and Developmental Course of ADHD. University of Massachusetts, January, Westborough, MA: Stonebridge Seminars.

60% of Reading Disorder-Dyslexia is genetic.

Willcutt, E.G. and Gaffney-Brown, R. (Summer, 2004). Etiology of Dyslexia, ADHD and Related Difficulties: Using Genetic Methods to Understand Comorbidity. Perspectives, 30 (3), pp. 12-15.

"Acquired" AD/HD

- Nigg recently found while doing NIH funded research that, "Blood lead levels were significantly higher in children with ADHD, combined type, but this was not the case in children who had ADHD, predominately inattentive type. Nigg and his group believe that high lead levels in the blood might play a role in the hyperactivity component of ADHD, but not the inattentive component of it." (p. 1 of 2).

Arechart-Treichel, J. (November 2, 2007). Lead in Children's Blood May Contribute to ADHD's Hyperactivity Component. Psychiatric News, 42 (21), p. 20. From: http://pn.psychiatriconline.org/cgi/content/full/42/21/20-a.

Nigg, J.T., Knottnerus, G.M., Martel, M.M., Nikolas, M., Cavanagh, K., Karmaus,W. and Rappley, M.D. (2008). High Blood Lead Levels Associated with Clinically Diagnosed Attention-Deficit/Hyperactibity Disorder and Mediated by Weak Cognitive Control. Biological Psychiatry, 63 (3), pp. 325-331.

What does "Neurobiological" mean?

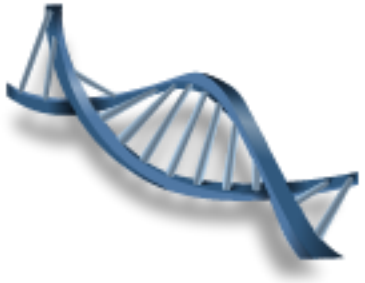
1. Damage to different neural networks may cause AD/HD symptoms.
2. Differences in Brain Development may cause them, too (more common).
3. AD/HD, "…is a condition of the brain produced by genes."

Swanson, J. and Castellanos, X. (1998). Biological Basis of Attention Deficit Hyperactivity Disorder: Neuroanatomy, Genetics, and Pathophysiology. Available from-http://addbalance.com/add/nih/19981118c.htm.

Biederman, J. (October 27, 2006). Advances in The Neurobiology of AD/HD. Paper presented at the 18th Annual CHADD International Conference, Chicago, IL.

AD/HD is a Multi-etiological Disorder

- Genetic 80%
- Environmental <20%
- Brain insult <20%
- Chemical exposure <20%
- 20% “Acquired” AD/HD, mostly male



Biederman, J. (October 27, 2006). Advances in The Neurobiology of AD/HD. Paper presented at the 18th Annual CHADD International Conference, Chicago, IL.

Barkley, R.A. (October 27, 2006). Research Symposium I: A Decade of Research: What We Know About AD/HD. Paper presented at the 18th Annual CHADD International Conference, Chicago, IL.

What Does "Neurobiological" Mean?

- Stephen Pinker – "The Blank Slate: The Modern Denial of Human Nature" or better stated, "The Lie of the Blank Slate".

Pinker, S. (2002). The Blank Slate: The Modern Denial of Human Nature. New York, NY: Viking.

- "Although learning disabilities may be exacerbated by other variables, such as ineffective teaching strategies or socioeconomic barriers, this paper supports the position that the essence of learning disabilities is neurobiological in nature." (p. 61)

Fiedorowicz, C., et.al. (2001). Neurobiological Basis of Learning Disabilities. Learning Disabilities, 11 (2), pp. 61-74.

What Does "Neurobiological" Mean? (Continued)

"Of particular relevance to this review is the compelling evidence in support of the neurobiological basis of learning disabilities. Studies employing widely divergent methodologies, e.g. research using genetic analysis, neuroanatomical neuroimaging, electrophysiological recording, pathological analysis of brain tissue at autopsy, and neuropsychological evaluation have yielded highly convergent conclusions in support of a neurobiological etiology." (p. 70)

Fiedorowicz, C., et.al. (2001). Neurobiological Basis of Learning Disabilities. Learning Disabilities, 11 (2), pp. 61-74.

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.

“MMR doctor defends his research”

“Dr. Andrew Wakefield said he adhered to official guidelines in his research, which led to the publication of the 1998 Lancet paper. He said he had wanted to treat and prevent autism after being approached by worried parents. The 51-year-old, who is now working in the US, is accused of violating ethical guidelines, and of acting against the clinical interests of the children who took part in his trial. He is also accused of acting dishonestly in failing to disclose to the Lancet that he was advising solicitors acting for the parents who had alleged their children had been damaged by MMR…” (p. 1 of 3).

Author (April 2, 2008). MMR Doctor Defends His Research. BBC News. From: http://newsvote.bbc.co.uk/mpapers/pagetools/print/news.bbc.co.uk/2/hi/health/7314144.stm.

Centers for Disease Control and Prevention

- "Autism is known to be a genetic disorder, at least in part." (p. 2 of 3)

Author (No Date). Fact Sheet: Study to Explore Early Development (SEED). Center for Disease Control and Prevention. From website: http://www.cdc.gov/ncbddd/autism/states/new/CADDRE%20Fact%20Sheet%20July%202007.pdf.

- **Centers for Autism and Developmental Disabilities Research and Epidemiology (CADDRE) Network**: "The CADDRE Network is currently working on the Study to Explore Early Development (SEED) – a five-year, multi-site collaborative study to help identify factors that may put children at risk for autism spectrum disorders (ASDs)."

Centers for Disease Control and Prevention, Autism Information Center, Centers for Autism and Developmental Disabilities Research and Epidemiology. From website: http://www.cdc.gov/ncbddd/autism/caddre.htm.

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."

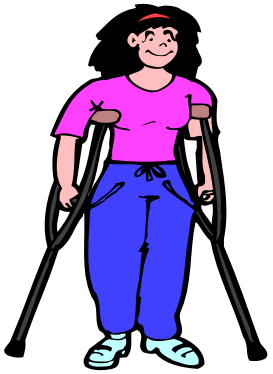
Centers for Disease Control and Prevention. Autism Information Center. http://www.cdc.gov/ncbddd/autism/overview.htm#is

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

What is a "Disability?"



- With adults the term disability has become a legal term of art since the passage of the American's with Disability Act (ADA).
- One must be impaired compared to the Average American.
- Highly Controversial

Gordon, M. and Keiser, S. (Eds.) (1998). Accommodations in Higher Education Under the Americans with Disabilities Act: A No-Nonsense Guide for Clinicians, Educators, Administrators, and Lawyers. New York, NY: Guilford.

Ways Social Interactions Influence Physical Health

- Social Support: Stress Buffering-Reduces the stressful event by promoting less threatening interpretation of the event.
- Social Integration: Main Effect-Promotes positive psychological states. Social motivation and pressure to care for oneself.
- Negative Interactions: Relationships as a Source of Stress-Elicits psychological stress and increases risk for disease.

Cohen, S. (November, 2004). Social Relationships and Health. American Psychologist, 59 (8), pp. 676-674.

Skills of Social Emotional Competence

- Awareness of own emotional state
- Awareness of other's emotional state
- Emotional use of words
- Ability to cope with emotional distress
- Ability to attend to the reaction of others

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

Social Disorders

- Bryan estimated from 34% to 59% of LD children are at risk for social interaction problems.

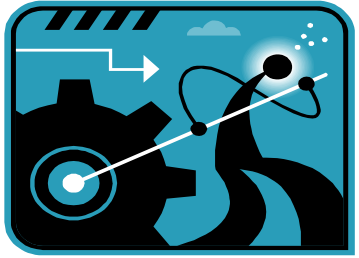
Bryan, T. (1997). Assessing the Personal and Social Status of Students with Learning Disabilities. Learning Disabilities Research and Practice, 12 (1), pp. 63-76.

Social Disorders

- Siegel stated the most pervasive problem LD adults have are their difficulties with social interaction.

Siegel, E. (1974). The Exceptional Child Grows Up. New York, NY: Dutton.

Social Disorders

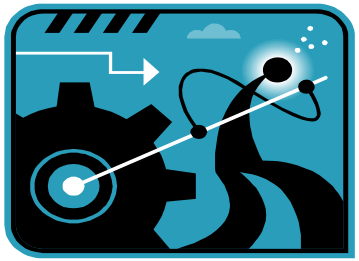


- "…social skills deficits can be the most debilitating part of the learning-disabled experience." (p. 201)
- "Failure at 'office politics' can lead to being fired. Many people with learning disabilities, at high or low levels, reach a plateau and are unable to advance for reasons of personal matching." (p. 201)
- Poor social skills are the reason for under-employment in many with LD.

Brown, D.S. and Gerber, P.J. (1994). Employing People with Learning Disabilities. In P.J. Gerber and H. B. Reiff (Eds.), Learning Disabilities in Adulthood: Persisting Problems and Evolving Issues. Austin, TX: Pro-Ed, pp. 194-203.

McLoughlin, D., Fitzgibbon, G. and Young, V. (1994). The Adult Dyslexic: Assessment Counseling and Training. San Diego,CA: Singular.

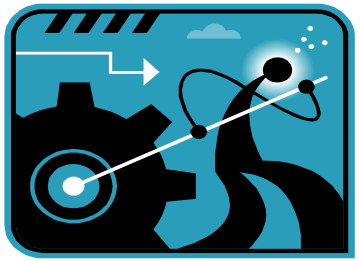
Social Disorders



- Over half of all AD/HD children will suffer social rejection because of social interaction problems.
- Impulsivity?

Barkley, R.A. (1998). Attention-Deficit Hyperactivity Disorder: A Handbook for Diagnosis and Treatment, Second Edition. New York, NY: Guilford, p. 191.

Social Disorders



- Difficulty with others is one of the main reasons AD/HD adults loose their jobs.

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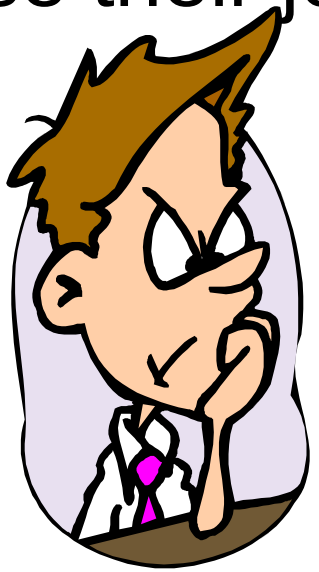


Ratey, N. and Griffith-Haynie, M. (1998). Coaching to Improve Workplace Performance. Paper presented at the Fourth Annual ADDA Adult ADD Conference, March 26-28, Washington, DC.

AD/HD and Employment

- One-half of AD/HD adults are unemployed

Biederman, J. (October 27, 2006). Advances in The Neurobiology of AD/HD. Paper presented at the 18th Annual CHADD International Conference, Chicago, IL.

Social Disorders

- AD/HD Combined Type men married less, reported interpersonal and sexual problems, had general difficulties with socialization, difficulties with heterosocial responses and problems with assertiveness (Weiss and Hechtman, 1993)
- Those with AD/HD often have problems with emotional regulation. This causes problems, too.

Weiss, G. and Hechtman, L.T. (1993). Hyperactive Children Grown Up (Second Edition). New York, NY:Guilford.

Canu, W.H. and Carlson, C.L. (April, 2004). ADHD and Social Adaptation From Childhood to Adulthood. ADHD Report, 12 (2), pp. 1-6.

Social Disorders

- Men with Inattentive AD/HD were rated more negatively by women than men with Combined Type AD/HD and those without AD/HD as potential dates.
  - AD/HD, PI men are less talkative, less assertive started dating later.
  - Less desire to continue interaction by women

Canu, W.H. and Carlson, C.L. (April, 2004). ADHD and Social Adaptation From Childhood to Adulthood. ADHD Report, 12 (2), pp. 1-6.

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

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

Nonverbal Learning Disorders (NVLD)

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

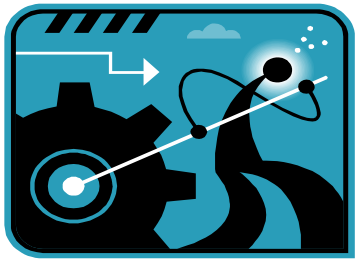
Semrud-Clikeman, M. (October 26, 2006). AD/HD and Co-morbidity: Aspergers, Autism Spectrum and Nonverbal Learning Disabilities. Paper presented at the Pre-Conference Institutes of the 18th Annual CHADD International Conference, Chicago, IL.

Autism Spectrum Disorders

- "The Core Problem with autism is their social disability." (Klin, 2001)

Klin, A. (2001). <u>Autism, Asperger's and the PDD Spectrum</u>. Seminar presented at the 33rd Annual Arizona Association of School Psychologists Conference, "Across the Spectrum", October 11 and 12, 2001, Mesa, AZ.

Autism Spectrum 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.

Social Interaction

"…traditional psychologists and neurologists have been slow to acknowledge that social behavior is at least in part a brain function just like memory or language" (p. 296).

Ratey, J.J. (2001). A User's Guide to the Brain: Perception, Attention, and the Four Theaters of the Brain. New York, NY: Vintage.

Neurosocial Disorder

- Rosen and Bartak broke down social interaction into three parts (which are intertwined):
  - ***Social Perception:*** The ability to pe social interactions.
  - ***Social Interpretation:*** How we understand social interaction after it is perceived.
  - ***Social Skills:*** Emotional, cognitive, verbal and nonverbal ways we socially behave.

Rosen, W. and Bartak, J. (2002). Distinguishing Features of Social Deficits in Children with Neurobiological Disorders. Learning Disabilities Association International Conference, January 15, Denver, CO.

Neurosocial Disorder

- So many of us are so well wired to pick up proper social behavior intuitively, we have overlooked those who don't and need explicit training in social interactions and have viewed them as just misbehaving.
- ***"Neurosocial Disorders"*** = "Social Learning Disabilities"

Rosen, W. and Bartak, J. (2002). Distinguishing Features of Social Deficits in Children with Neurobiological Disorders. Learning Disabilities Association International Conference, January 15, Denver, CO.

Neurosocial Disorder

- With Neurosocial Disorders you must match etiology to treatment.

Rosen, W. and Bartak, J. (2002). Distinguishing Features of Social Deficits in Children with Neurobiological Disorders. Learning Disabilities Association International Conference, January 15, Denver, CO.

Neurosocial Disorder

- When treating such disorders you want to start treatment where the breakdown occurs.
  - Encoding
  - Representation
  - Generating Responses
  - Decision Making

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 18th Annual CHADD International Conference, Chicago, IL.

Subtypes of Social Difficulties

1. AD/HD typically associated with Oppositional Defiant Disorder, or Conduct Disorder
2. Autism Spectrum/Asperger's Disorder/NVLD
3. AD/HD only

Voeller, K.S. (1994). Techniques for Measuring Social Competence in Children. In R.G. Lyon (Ed.), Frames of Reference for the Assessment of Learning Disabilities: New Views on Measurement Issues. Baltimore, MD: Paul H. Brookes, pp. 523-554.

Social Learning Disabilities

- LD children are less socially competent and less well liked.
- Typical social cognitive problems:
  - Interpretation and perception of faces, tone of voice, gesture and body language
  - Poor at social inference and poor social judgment

Wren, C. (2000). Hanging By A Twig. New York, NY: Norton.

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.

Emotional Intelligence

- Lane wrote, “Emotional Intelligence may be broadly defined as the ability to use emotional information in a constructive and adaptive manner.” (p. 2)

Lane, R.L. (2000). Neural Correlates of Conscious Emotional Experience. In R. Lane, L. Nadel, G. Ahern, J. Allen, A. Kazniak, S. Rapcsak and G. Schwartz (Eds.), Cognitive Neuroscience of Emotion. New York, NY: Oxford University Press, pp. 345-370.

Emotional Intelligence

- Daniel Goleman stated that emotional intelligence is intricately imbedded in the human neuroanatomy.

Goleman, D. (1997). <u>Emotional Intelligence: Why It Can Matter More Than IQ</u>. New York, NY: Bantam.

Emotional Intelligence

- A prerequisite for empathy is an awareness of one's own emotions.

Lane, R.L. (2000). Neural Correlates of Conscious Emotional Experience. In R. L. Lane, L. Nadel, G. Ahern, J. Allen, A. Kazniak, S. Rapcsak and G. Schwartz (Eds.), Cognitive Neuroscience of Emotion. New York, NY: Oxford University Press, pp. 345-370.

Emotional Intelligence

- Reif et. al. wrote, “Studies have indicated that many students with LD have difficulty with being flexible, being willing to change , and developing large repertories of behavioral response…clearly, adaptability is a desirable behavior in many aspects of adult life.” (p. 75)

Reiff, H.B., Hatzes, N.M.Bramel, M.H. and Gibbon, T. (2001). The Relation of LD and Gender with Emotional Intelligence in College Students. Journal of Learning Disabilities, 34 (1), pp. 66-68.

Emotional Intelligence

- AD/HD Children live a lifetime of social rejection.
- Over 50% of children with AD/HD have poor social skills.
- AD/HD children often are not aware of their poor social skills and blame others for their problems.

Barkley, R.A. (1998). Attention-Deficit Hyperactivity Disorder: A Handbook for Diagnosis and Treatment, Second Edition. New York, NY: Guilford, pp. 191-192.

Simon Baron-Cohen and Emotional Intelligence

- Autism may be an extreme form of the biological male personality.
- Males are into ***Systematizing (S)***, or understanding things.
- Females are into ***Empathizing (E)***, or understanding people.
- Those with Autism (mostly males) have no ***Empathizing***, but are strong in ***Systematizing***.
- The ***E-S Spectrum***

Cowley, G. (September 8, 2003). Girls, Boys and Autism. Newsweek, pp. 42-50.
Baron-Cohen, S. (2003). The Essential Difference. New York, NY: Pereus.

Dyslexia and Gender

- Sally Shaywitz (1996) reported:
  - Women's brains appear to have bilateral phonological processing.
  - This may explain why women tend to have fewer language deficits after left brain strokes.
  - It may also explain why more women than men compensate for dyslexia.

Shaywitz, S.E. (1996). Dyslexia. Scientific American, 275 (5), pp. 98-104.

AD/HD and Gender

- Quinn and Nadeau (2002) believe there should be separate female symptoms and criteria for AD/HD.
- Goldstein and Gordon (2003) say there is no research to justify this.
- ***However, AD/HD girls suffer socially more than AD/HD boys.***

Quinn, P. O. and Nadeau, K.G. (2002). Gender Issues and AD/HD. Silver Spring, MD: Advantage.

Goldstein, S. and Gordon, M. (August, 2003). Gender Issues and ADHD: Sorting Fact From Fiction. ADHD Report, 11 (4), 7-11, 16.

Langer, H. (2002). Role Expectations. In P.O. Quinn and K.G. Nadeua (Eds.), Gender Issues and AD/HD. Silver Spring, MD: Advantage, pp. 70-80.

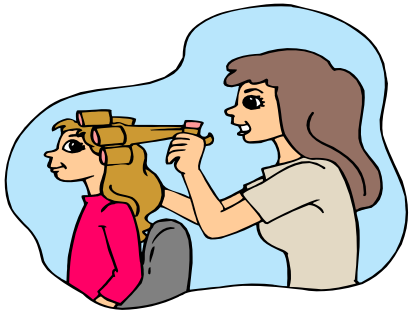
Asperger's and Gender

- Girls and women with Asperger's Disorder suffer more socially that boys and men with Asperger's Disorder.

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

Hully, C. and Larmar, S.A. (2006). Asperger Syndrome in Adolescent Females. International Journal of Learning. 13 (3), p. 1-6. From Website: http://www98.griffith.edu.au/dspace/bitstream/10072/14167/1/40458.pdf.

Compassion



- Three things make humans behaviorally different from all other species:
  - Our capacity to delay our response to our environment (Bronowski, 1977).
  - Our capacity for compassion (Leakey, 1995).
  - Our capacity for long-term compassion (Grandin, 1995).

Bronowski, J. (1977). Human and Animal Languages: In a Sense of Future. Cambridge, MA: MIT Press. pp. 104-131.

Leakey, R. (1995). Speech given to the National Press Club, Washington, DC, Played on National Public Radio.

Grandin, T. (1995). Thinking In Pictures: And Other Reports From My Life With Autism. New York, NY: Vintage.

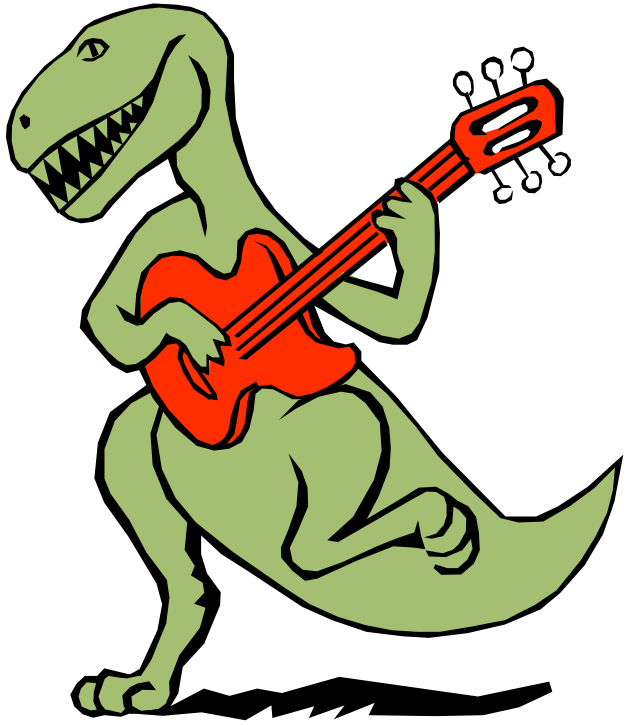
Compassion

- Does a toothless Homo Erectus skull found at Dmanisi that was over 1,800,000 years old show evidence of human compassion?

Fischman, J. (April, 2005). Family Ties: Dmansi Find. National Geographic, 202 (4), 18-27.

Kinder, Gentler, T-Rex

- There is now evidence that some dinosaurs nested and raised offspring similar to modern birds. Hence, they had some capacity for compassion.



Smith, D. (No date). Dinosauria: Life History and Ecology. From Website: http://www.ucmp.berkeley.edu/diapsids/dinolh.html.

Compassion

- “Scientists figured out decades ago that chimps are our nearest evolutionary cousins, roughly 98% to 99% identical to humans at the genetic level. When it comes to DNA, a human is closer to a chimp than a mouse to a rat” (pp. 25-26).

Lemonick, M.D., and Dorfman, A. (October 9, 2006). What makes Us Different? Time, 168 (15), pp. 44-53.

Compassion

"In the summer of 1982 Kat was newly pregnant, and Washoe doted over her belly, asking about her BABY. Unfortunately, Kat suffered a miscarriage. Knowing that Washoe had lost two of her own children, Kat decided to tell her the truth. MY BABY DIED, Kat signed to her. Washoe looked down to the ground. Then she looked into Kat's eyes and signed CRY, touching her cheek just below the eye. When Kat had to leave that day, Washoe would not let her go. PLEASE PERSON HUG, she signed." (Fouts, 1997; Edwards, 2000)

Fouts, R. (1997). Next of Kin: My Conversations with Chimpanzees. New York, NY: William Morrow.

Edwards, M. (Spring, 2000). Book Review. The Harvard Brain. From website: hcs.**harvard**.edu/~husn/**BRAIN**/vol7-spring2000/**fouts**.htm.

Compassion

- Bonobo: Pan paniscus
  - Shares 98% of its genetic profile with humans.
  - They have been compared to australopithecines
  - “In physique, a bonobo is as different from a chimpanzee as a Concorde is from a Boeing 747.” (p. 3 of 14)

De.Waal, F.B.M. (March 1995). Bonobo Sex and Society. Scientific American. pp. 82-88. From Website: http://primates.combonobos/bonobosexsoc.html.

Compassion

- “Some scientists believe that bonobos are the most intelligent of the primates (other than humans, of course!). Maybe that’s because, genetically, bonobos are considered our closest living relatives. They share many of our human behaviors, such as teaching their young social skills, using tools to get food, and working together for the good of the entire troop.” (p. 2 of 3)

Author (2007). Mammals: Bonobo (Pigmy Chimp). San Diego Zoo. From Website: http://www.sandiegozoo.org/animalbytes/t-bonobo.html.

Compassion

- The dominate male bonobo at the Great Ape Trust in Iowa, Kanzi, can communicate by using 348 symbols and knows the meaning of up to 3000 words!

Raffaele, P. (November, 2006). The Smart and Swinging Bonobo. Scientific American. 37 (6), pp. 66-75.

Compassion

- “Apparently as intelligent as chimpanzees, bonobos have, however, a far more sensitive temperament. During World War II bombing of Hellabrun, Germany, the bonobos all died of fright from the noise; the chimpanzees were unaffected.” (p. 4 of 14)

De.Waal, F.B.M. (March 1995). Bonobo Sex and Society. Scientific American. pp. 82-88. From Website: http://primates.combonobos/bonobosexsoc.html.

Vasopressin

"Vasopressin – secretive, in the background, subtle aggressive male energies; brother to testosterone, brother to oxytocin (makes you want to contact in an active way, male way, as does oxytocin)" (p. XVI)

Brizendine, L. (2006). The Female Brain. New York, NY: Morgan Road.

Vasopressin

"In recent years there has been particular interest in the role of vasopressin in social behavior. It is thought that vasopressin, released into the brain during sexual activity, initiates and sustains patterns of activity that support the pair-bond between the sexual partners; in particular, vasopressin seems to induce the male to become aggressive towards other males."

Author (July, 2008). Vasopressin. From Website: http://en.wikipedia.org/wiki/Vasopressin.

Bonobos & Vasopressin

"Interestingly, this same polymorphic microsatellite in the human *AVPR1A* that has been associated in autism is absent in the common chimpanzee, but present in the bonobo. Bonobos are know for high levels of psychosexual reciprocity and they appear to use sexuality to promote social reconciliation as well as social bonding within the group. Therefore, it is intriguing to consider that as in voles, variations in unstable microsatellite sequences in the promoters of the primate vasopressin receptor may contribute to species difference in expression and social behaviour, as well as to individual differences in social behaviour." (p. 2195)

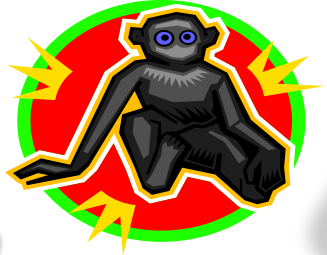
Hammock, E.A.D. and Young, L.J. (December, 2006). Oxytocin, Vasopressin and Pair Bonding: Implications for Autism. Philosophical Transactions of the Royal Society of Biological Sciences, 361 (1476), pp. 2187-2198. From Website: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1764849.

Chimpanzee, Bonobos, Humans & Vasopressin

"Similar genetic variation in the human *AVPR1A* may contribute to variations in human social behavior including extremes outside the normal range of behavior and those found in autism spectrum disorders." (p. 2187)

Hammock, E.A.D. and Young, L.J. (December, 2006). Oxytocin, Vasopressin and Pair Bonding: Implications for Autism. Philosophical Transactions of the Royal Society of Biological Sciences, 361 (1476), pp. 2187-2198. From Website: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1764849

Chimpanzee, Bonobos, Humans & Vasopressin



"Our two closest primate cousins – chimpanzees and bonobos –also have different lengths of this gene, which match their social behaviors. Chimpanzees, who have the shorter gene, live in territorially based societies controlled by males who make frequent, fatal war raids on neighboring troups. Bonobos are run by female hierarchies and seal every interaction with a bit of sexual rubbing…"

Chimpanzee, Bonobos, Humans & Vasopressin

"…They are exceptionally social and have a long version of the gene. The human version of the gene is more like the bonobo gene. It would seem that those with the longer version of the gene are more socially responsive. For example, this gene is shorter in humans with autism…" (p. 74)

Brizendine, L. (2006). The Female Brain. New York, NY: Morgan Road.

Alexithymia

What is Alexithymia?

1. Tend not to have fantasies, no feelings, and have sharply limited emotional vocabularies.
2. They have colorless dreams.
3. They cannot tell bodily sensations from emotions and are baffled by them.
4. They have great difficulty making decisions because they lack “gut feelings.”

Goleman, D. (1995). Emotional Intelligence: Why It Can Matter More Than I.Q. New York, NY: Bantam.

Alexithymia

- "Functional imaging studies implicate medial and prefrontal cortex and posterior superior sulcus (STS)…(sic. The) STS is concerned with representing the actions of others through the detection of biological motion; medial prefrontal regions are concerned with explicit representation of the states of the self. These observations suggest that the ability to mentalize has evolved from a system for representing actions."

Frith, C.D. and Frith, U. (1999). Intersecting Minds-A Biological Basis. Science, 286, 1692-1695.

Alexithymia

Lane wrote, "Several neuroimaging studies reveal that an area of the medial prefrontal cortex very close to that identified in our attention to emotional experience study has been implicated during the performance of theory of mind tasks…these findings suggest that the neural substrates of the mental representation of one's own and other's mental states are closely related" (p. 18) Lane continued that several studies of brain injured individuals when coupled with the above appeared to indicate, ***"…that successful social adaptation requires the 'dual task' ability to stay in touch with the needs of others while paying due attention to one's own needs." (p. 20)***

Lane, R. (2000). Neural Correlates of Conscious Emotional Experience. In L.R. Lane, et. al. (Eds.), Cognitive Neuroscience of Emotion. New York, NY: Oxford University Press, pp. 345-370.

Macaque Monkey

- Macaques from:
  - Luciano Fadiga discovered
  - “mirror neurons” at the University of Parma in Italy in 1992.
  - Rizzolatti, G., Fogassi, L. and Gallese, V. (November, 2006). Mirrors in The Mind. Scientific American, 296 (5), pp. 54-61.

Mirror Neurons

- Italian study of macaque monkeys in 1992
  - Known for years cells of premotor cortex fire just before movement.
  - Discovered the same cells fired in the same pattern when another primate was seen making the same movement!
  - Humans have these ***MIRROR NEURONS*** too.
  - They allow us to intuit others intentions and to feel their pain.

Begley, S. (Friday March 4, 2005). How Mirror Neurons Help Us to Empathize, Really Feel Others' Pain. The Wall Street Journal, p. B1.

Mirror Neurons

"Single cell recordings and brain imaging have demonstrated that the primate brain contains pre-motor neurons which fire not only when an individual makes a goal-oriented action, but also when an individual simply observes somebody else making the same action. These neurons fire even in the dark, when for example an individual hears the sounds associated with particular actions. These neuronal properties have been called mirror properties which are considered now to have a bearing on the development of emotions." (p. 1 of 2)

Author (Februray 19, 2005). American Association for the Advancement of Science Symposium to Take Place On Mirror Neurons. From website: http://eurekalert.org/pub_releases/2005-02/apa-ast021405.php.

Mirror Neurons

"Much as circuits of neurons are believed to store specific memories within the brain, sets of mirror neurons appear to encode specific sets of actions. This property may allow an individual not only to perform basic motor procedures without thinking about them but also to comprehend those acts when they are observed, without any need for explicit reasoning about them." (p. 56)

Rizzolatti, G., Fogassi, L. and Gallese, V. (November, 2006). Mirrors in The Mind. Scientific American, 296 (5), pp. 54-61.

Mirror Neurons

- “With knowledge of these neurons, you have the basis for understanding a host of enigmatic aspects of the human mind: ‘mind reading’ empathy, imitation learning, and even the evolution of language. Anytime you watch someone else doing something (or even starting to do something), the corresponding mirror neuron might fire in your brain, thereby allowing you to ‘read’ and understand another’s intentions, and thus develop a sophisticated *theory of other minds*.” (p. 2)

Ramachandran, V.S. (3/8/05). Mirror Neurons and Imitation Learning as the Driving Force Behind “The Great Leap Forward” in Human Evolution. www.edge.org/3rd_culture/ramachandran/ramachandran_p2.html, p. 2.

Mirror Neurons

- There are visual and audiovisual mirror neurons in the brain in several places.
- Areas involved in the brain:
  - Inferior Frontal Gyrus: guidance of movement/assessment of intentions
  - Anterior Cingulate Cortex: regulation of empathy
  - Angular Gyrus: semantic comprehension combining sensory input
  - Insula/Amygdala : pain & disgust

Rizzolatti, G., Fogassi, L. and Gallese, V. (November, 2006). Mirrors in The Mind. Scientific American, 296 (5), pp. 54-61.

Ramachandran, V.S. and Oberman, L.M. (November, 2006). Broken Mirrors. Scientific American, 296(5), pp. 62-69.

Mirror Neurons

How does the following relate to AD/HD?:

"If the mirror neuron system serves as a bridge in this process, then in addition to providing an understanding of other peoples intentions, it may have evolved to become an important component in the human capacity for observation-based learning and sophisticated cognitive skills." (p. 61)

Rizzolatti, G., Fogassi, L. and Gallese, V. (November, 2006). Mirrors in The Mind. Scientific American, 296 (5), pp. 54-61.

Mirror Neurons and Autism

- "Broken mirror neurons" ***MAY*** explain isolation and lack of empathy.
- Those with autism spectrum disorders lack activity in many areas of mirror neurons.

Ramachandran, V.S. and Oberman, L.M. (November, 2006). Broken Mirrors. Scientific American, 296(5), pp. 62-69.

Mirror Neurons

- “I suggest, also, that a loss of these mirror neurons may explain autism…Without these neurons the child can no longer understand or empathize with other people emotionally and therefore completely withdraws from the world socially.” (p. 2)

Ramachandran, V.S. (3/8/05). Mirror Neurons and Imitation Learning as the Driving Force Behind “The Great Leap Forward” in Human Evolution. www.edge.org/3rd_culture/ramachandran/ramachandran_p2.html, p. 2.

Mirror Neurons

I spoke to Uta Frith about using the combination of her group's research on emotional working memory and the mirror neuron research as an explanation of autistic behavior. She said the combination of theories could not differentiate autistic behavior and antisocial behavior.

Frith, U. (November 1, 2007). Personal Communication. International Dyslexia Association 58th Annual Conference, Dallas, TX.

Mirror Neurons

However, Blair wrote after reviewing the literature, “It is suggested from this literature that empathy is not a unitary system but rather a loose collection of partially dissociable systems. In particular, three divisions can be made: cognitive empathy (or Theory of Mind), motor empathy, and emotional empathy. The two main psychiatric disorders associated…

Mirror Neurons

"…with empathic dysfunction are considered: autism and psychopathy. It is argued that individuals with autism show difficulties with cognitive and motor empathy but less clear difficulties with respect to emotional empathy. In contrast, individuals with psychopathy show clear difficulties with a specific form of emotional empathy but no indications of impairment with cognitive and motor empathy." (p. 1 of 2)

Blair, R.J.R. (December, 2005). Responding to the Emotions of Others: Dissociating Forms of Empathy Through the Study of Typical and Psychiatric Populations. Consciousness and Cognition, 14 (4), pp. 698-718. From Website: www.sciencedirect.com/science?_ob=ArticleURL&_=B6WD0-4H39727-2&_user...

Mirror Neurons

- Mirror Neurons and Environmental Experience?
- Daniel Glaser's dancers.

Glaser, D. (January 2005). Mirror Neurons: Research Update. NOVAscienceNOW. Public Broadcasting System (PBS). www.pbs.org/wgbh/nova/sciencenow/3204/01-resup.html, p. 1

Alexithymia ***MAY*** BE A NEUROBIOLOGICAL DISORDER!

25% OF THOSE WITH AD/HD HAVE ALEXITHYMIA.

Ratey, J.J., Hallowell, E.M. and Miller, A.C. (1995). Relationship Dilemmas for Adults with ADD: The Biology of Intimacy. In K. Nadeau (Ed.), A Comprehensive Guide to Attention Deficit Disorder In Adults. New York, NY: Bruner Mazel, pp. 218-235.

Alexithymia MAY BE A NEUROBIOLOGICAL DISORDER!

People with Asperger's Disorder have difficulty with, "…conceptualizing and appreciating the thoughts and feelings of another person" (p. 112). This is "Theory of Mind."

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

"Symptoms" of Alexithymia

- Difficulty identifying different types of feelings
- Difficulty distinguishing between emotional feelings and bodily feelings
- Limited understanding of what caused the feelings
- Difficulty verbalizing feelings
- Limited emotional content in the imagination
- Functional style of thinking
- Lack of enjoyment and pleasure-seeking
- Stiff, wooden posture

Author (July 28, 2003). The Alexithymia FAQ. From web site: www.alexithymia.info/faq.htm/.

What About PTSD?

"If mild stress becomes chronic, the unrelenting cascade of cortisol triggers genetic actions that begin to sever synaptic connections and cause dendrites to atrophy and cells to die; eventually, the hippocampus can end up physically shriveled, like a raisin." (p. 74)

Ratey, J.J. (2008). Spark: The Revolutionary New Science of Exercise and The Brain. New York, NY: Little, Brown.

What About PTSD?

- Hippocampus looses neuronal connections
- Medication and talk therapy grow new neurons

Prince, J. (October 28, 2006). Closing Keynote Address - Bridging the Gap: Putting a Face on AD/HD. Paper presented at the 18th Annual CHADD International Conference, Chicago, IL.

Durman, R.S. (2002). European Journal of Psychiatry, 17 (Supplement 3), 306-310.

What About PTSD?

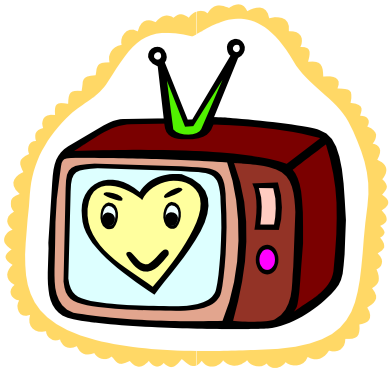
"At every level, from the microcellular to the psychological, exercise not only wards off the ill effects of chronic stress; it can also reverse them. Studies have shown that if researchers exercise rats that have been chronically stressed, that activity makes the hippocampus grow back to its preshriveled state." (p. 79)

Ratey, J.J. (2008). Spark: The Revolutionary New Science of Exercise and The Brain. New York, NY: Little, Brown.

Diagnostic Tools for Alexithymia

- Beth Israel Questionnaire (BIQ)
- Toronto Alexithymia Scale (TAS-20)

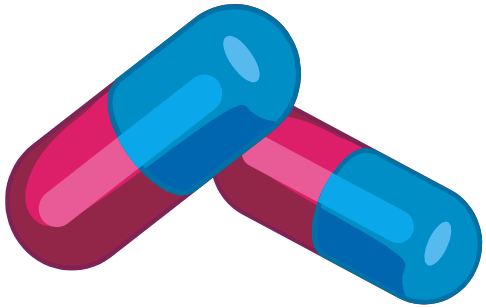
Author (July 28, 2003). The Alexithymia FAQ. From web site: www.alexithymia.info/faq.htm/ .



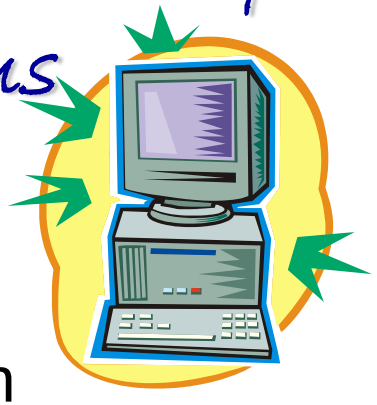
Possible Treatment for Emotional Working Memory Problems

- Stimulant Medication?
  - Lessens Hyperactivity and Impulsivity in AD/HD, Combined Type Individuals
  - Hundreds of Double Blind Studies to Support

Barkley, R.A. (2006). Attention Deficit Hyperactivity Disorder, 3rd Edition. New York, NY: Guilford.



Possible Alternative Medicine Treatment for Working Memory Problems



- Working Memory Training:
  - Torkel Klingberg, M.D., Ph.D.
  - Karolinska Institute- Stockholm, Sweden
  - CogMed software company (RM Program)
  - AD/HD deficient in visual spatial working memory. Gets worse with age.
  - ***MAY*** help relieve executive functioning difficulties and reading comprehension in Combined Type AD/HD.
  - ***More Research is needed!***

Klingberg, T. (February, 2006). Training Working Memory. AD/HD Report, 14 (1), pp. 6-8.

Barkley, R. (February, 2006). Editorial Commentary Issues in Working Memory Training in ADHD. ADHD Report, 14 (1), pp. 9-11.

Ingersoll, B. (October 26, 2006). Complementary Treatments for AD/HD. Paper Presented at the 18th Annual CHADD International Conference, Chicago, IL.

Klingberg, T. and Andersson, M. (October 28, 2006). Computerized Training of Working Memory in Children with AD/HD. Paper presented at the 18th Annual CHADD International Conference, Chicago, IL.

Oxytocin

"Oxytocin—Fluffy, purring kitty; cuddly, nurturing, earth mother; good witch Glinda in *The Wizard of OZ;* finds pleasure in helping and serving; sister to vasopressin (the male socializing hormone), sister to estrogen, friend of dopamine (another feel good brain chemical)." (p. XV)

Brizendine, L. (2006). The Female Brain. New York, NY: Morgan Road.

Oxytocin

"Oxytocin does two important things: (1) lowers blood pressure and stress-related responses, and (2) increases positive social behaviors, such as friendliness and desire to connect." (p. 1 of 3)

Author (2008). Oxytocin: World's Expert Talks About This Calming Hormone: An Interview with Kerstin Uvas-Moberg, M.D., Ph.D. Life Science Foundation. From Website: http://www.lifesciencefoundation.org/coxytocin.html.

Oxytocin in Autism

"There is modest, yet intriguing evidence linking oxytocin to autism. Oxytocin in blood levels of boys with autism was found to be lower than in a group of age–matched controls." (p. 2194)

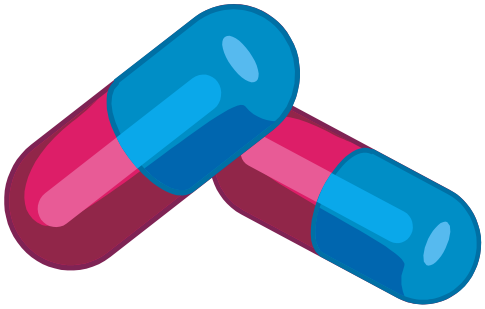
Hammock, E.A.D. and Young, L.J. (December, 2006). Oxytocin, Vasopressin and Pair Bonding: Implications for Autism. Philosophical Transactions of the Royal Society of Biological Sciences, 361 (1476), pp. 2187-2198. From Website: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1764849

Oxytocin & Vasopressin In Autism

"Oxytocin and vasopressin contribute to a wide variety of social behaviors, including social recognition, communication, parental care, territorial aggression and social bonding." (p. 2187)

Hammock, E.A.D. and Young, L.J. (December, 2006). Oxytocin, Vasopressin and Pair Bonding: Implications for Autism. Philosophical Transactions of the Royal Society of Biological Sciences, 361 (1476), pp. 2187-2198. From Website: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1764849

Some Treatments For Mirror Neuron Difficulties



- Risperidone, MDMA (ecstasy):
  To raise oxytocin levels
- Biofeedback:
  To help control anxiety

.

Author (1997). Use of “Atypical” Neuroleptics in the Treatment of PDDs. MedScape Psychiatry & Mental Health e Journal, 2 (4): www.medscape.com/viewarticle/430897_5

Ramachandran, V.S. and Oberman, L.M. (November, 2006). Broken Mirrors. Scientific American, 296(5), pp. 62-69

MDMA IS AN EXPERIMENTAL TREATMENT!!!!!

Theory of Mind & Emotional Working Memory Disorder

- "Able individuals with autism spectrum disorders can with time and practice achieve awareness of mental states by compensatory learning." (p. 977)

Frith, U. (2001). Mind Blindness and the Brain in Autism. Neuron, 32, 969-979.

- Possible Treatment Technique -

  Carol Gray – Social Stories:

  http://www.thegraycenter.org/

Web Site and Professionals Who Can Help With Alexithymia

- Alexithymia Information Resource: www.alexithymia.info
- Psychologists-American Psychological Association: www.apa.org
- Psychiartists-American Psychiatric Association: www.apa@psych.org
- Social Workers-National Association of Social Workers: www.naswdc.org
- American Association of Marriage and Family Therapists: www.aamft.org
- Counselors-National Board of Certified Counselors: www.nbcc@nbcc.org

Professionals Who Can Help With Alexithymia (Continued)

- Behavioral Neurology/Neuropsychiatry-American Neuropsychiatric Association: www.anpaonline.org
- Speech Language Pathologist-American Speech-Language Hearing Association: www.professional.asha.org

Memes

- "A meme (pronounced 'meem') is 'an idea, behavior, style or usage that spreads from person to person within a culture'…But controversy has erupted over the proposal, presented here by psychologist Susan Blackmore, that human's uncanny ability to imitate, and thus to transmit memes, is what sets us apart from other species. Memes, she argues, have been (and are) a powerful force shaping our cultural – and biological –evolution." (p. 65)

Blackmore, S. (October 2000). The Power of Memes (Editor's Introduction). Scientific American, 283 (4), pp. 64-66,68-71,73.

Memes

- In a final twist, it would pay for people to mate with the most proficient imitators, because by and large, good imitators have the best survival skills. Through this effect, sexual selection guided by memes, could have played a role in creating our big brains. By choosing the best imitator for a mate women help propagate the genes needed to copy religious rituals, colorful clothes, singing, dancing, and so on…our big brains are selective…

Memes (Continued)

- "…imitation devices built by and for the memes such as for genes." (p. 69)

Blackmore, S. (October 2000). The Power of Memes (Editor's Introduction). Scientific American, 283 (4), pp. 64-66,68-71,73.

Memes

- Barkley spoke of how many of those with AD/HD have difficulty with the internalization of speech, and how this in turn can make AD/HD people vulnerable to others “stealing their ideas.”
- In addition, their impulsivity may cause problems with vicarious learning. Those with AD/HD may have trouble “stealing” the ideas of others.

Barkley, R.A. (February 19-20, 2002). ADHD and Oppositional Defiant Children. Seminar presented in Phoenix Arizona.

Childhood Makes Us Special!

- Human childhood is about 500,000 years old.
- The new born brain is 25% of adult size. This is not the case of other primates.
- "…complex brain wiring develops when people interact with others and the outside world." (p. B7)
- This allows for the development of language, a social system, parental bonds and culture.

Begley, S. (September 16, 2004). Childhood May Separate Humans From Apes. The Wall Street Journal, 244 (54), p. B1 and B7.

Play

- Dyslexia can negatively effect the ability to have relationships, playmates and play opportunities.

Ryan, M. (1994). The Other Sixteen Hours: The Social and Emotional Problems of Dyslexia. Baltimore, MD: Orton Dyslexia Society.

- AD/HD Children are at great risk for being socially rejected due to their AD/HD symptomatology.

Barkley, R.A. (February 19-20, 2002). ADHD and Oppositional Defiant Children. Seminar presented in Phoenix Arizona.

- Children with Asperger's Disorder treat other children like objects, they have little or no "theory of mind", imaginative play, or the "memes of life." They do not seek out others to play with.

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

Play

- Children develop fine and gross motor skills through play.
- This in turn creates relationships, self-esteem and acceptance by others.

Lerner, J. (1997). Learning Disabilities: Theories, Diagnosis, and Teaching Strategies, Seventh Edition. Boston, MA: Houghton Mifflin.

Play

- Isolation hinders children's social and cognitive development.
- Play also directly affects the development of the frontal lobe…executive function.
- Isolation may worsen the genetic problems with executive function caused by AD/HD.
- It can hinder the development of "theory of mind".
- It may also hinder the development of a sense of morality, social roles and the ability to bond with others.

Azar, B. (March, 2002A). It's More Than Just Fun and Games. Monitor On Psychology, 33 (3), pp. 50-51.

Azar, B. (March 2002B). The Power of Pretending. Monitor On Psychology 33 (3), pp. 46-47.

Dyssemia

Dyssemia

- “Dyssemia is a term that we…refer(s) to any significant difficulty in understanding or sending nonverbal information.” (Nowicki and Duke, 2002, p. 2)

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

Dyssemia

- Nowicki and Duke believed about 10 percent of those with Dyssemia have a neurobiological form of the disorder.

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

Dyssemia

- The ability to learn through vicarious learning is very important to learning non-verbal social skills and about the non-verbal environment.

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

Types of Dyssemia

- Expressive Dyssemia
- Receptive Dyssemia
- Proxemics: The use of space
- Facial expressions
- Paralanguage: Inflection
- Gestures: Give emphasis to speech
- Postures: Long distance social interaction
- Fashion/Objects: Memes
- Chromemics: Time and Rhythm

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

Dyssemia

- Those with AD/HD have trouble with vicarious learning and would be expected to have trouble learning non-verbal social interaction which is not directly taught. Their impulsivity would make it difficult for them to attend to the non-verbal cues of others, too.

Barkley, R.A. (February 19-20, 2002). ADHD and Oppositional Defiant Children. Seminar presented in Phoenix Arizona.

Mirror Neurons

How does the following relate to AD/HD?:

"If the mirror neuron system serves as a bridge in this process, then in addition to providing an understanding of other peoples intentions, it may have evolved to become an important component in the human capacity for observation-based learning and sophisticated cognitive skills." (p. 61)

Rizzolatti, G., Fogassi, L. and Gallese, V. (November, 2006). Mirrors in The Mind. Scientific American, 296 (5), pp. 54-61.

Mimicry

- “Our talent for mimicry may serve an important purpose. Some studies imply that spontaneous imitation acts as a ‘social glue’ promoting feelings of friendliness and a sense of togetherness.” (p. 55)
- If you mimic someone you are seen as friendly; if not, you are seen as less friendly.
- People with Autism Spectrum Disorders can mimic, but they have difficulty inferring intention.
- You must inhibit imitation to coordinate interactions with others.

Sebanz, N. (December 2006/January 2007). It Takes 2 To…Scientific American: Mind. 17 (6), pp.52-57.

Dyssemia

- AD/HD and AD/HD-like symptoms are highly comorbid in those with LD, NVLD and Asperger's Disorder.

Brown, T.E. (2000). Attention-Deficit Disorders and Comorbidities in Children, Adolescents and Adults. Washington, D C: American Psychiatric Press.

Dyssemia

- Those with Asperger's Disorder and High Functioning Autism have problems with Theory of Mind which can cause problems with receptive interpretation of non-verbal cues from others. It can also cause them problems in putting importance on their own non-verbal cues.

Klin, A., Volkmar, F.R. and Sparrow, S.S. (2000). Asperger Syndrome. New York, NY: Guilford.

Dyssemia

- About 80% of those with Learning Disorders have some type of Reading Disorder/Dyslexia which is a language disorder.

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

- Part of language is non-verbal Paralanguage which includes humming, voice quality, loudness and noises between words.

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

Assessment for Nonverbal Behavior

Magill-Evans, J., Koning, C., Cameron-Dadava, A. and Manyk, K. (September, 1995). The Child and Adolescent Social Perception Test. Journal of Nonverbal Behavior, 19 (3), pp. 151-169.

THE CEREBELLUM

What The Cerebellum Does

Allen indicated neuroimaging studies show the Cerebellum is involved in the following functions:

- Attention
- Forms of Learning
- Memory tasks
- Conditional anxiety
- Complex reasoning and problem solving
- Sensory and Motor Tasks

Allen, G. (March 11, 1998). Functional Diversity of the Cerebellum. Paper presented at the New Angles on Motor and Sensory Coordination in Learning Disabilities Topical Medical Workshop; Learning Disabilities Association, International Conference, Washington, DC; Infomedia, tape R130-W1A, Garden Grove, CA.

The Cerebellum & Social Interaction

"The Cerebellum has only recently been implicated in the normal functioning of social behavior…new research has shown that the cerebellum is important as a mediator in cognition. To perceive an object or event, we must pull together the various sensory qualities and any relevant memories or thoughts in a carefully timed way…the cerebellum assists in delaying or accelerating these associations,and regulates attentional states…"

The Cerebellum & Social Interaction (Continued)

"Coordinating associations and attention is essential to entering into a relationship with another human being. Communication, conversation, and graceful social interaction all depend on being able to pay attention to another person and to one's own internal states and to alternate easily back and forth between them." (p.305)

Ratey, J.J. (2001). A User's Guide to the Brain: Perception, Attention, and the Four Theaters of the Brain. New York, NY: Vintage.

Dyslexia and The Cerebellum

80% of dyslexics show signs of cerebellar problems!

Fawcett, A.J. and Nicolson, R.I. (2001). Dyslexia and The Role of The Cerebellum. In A.J. Fawcett (Ed.), Dyslexia: Theory & Good Practice. Philadelphia, PA: Whurr, pp. 89-105.

Dyslexia and The Cerebellum

- Automaticity is the problem!
- When multitasking and rapid processing are needed
- Thinking is a frontal lobe function
- It is a problem of fluency
- "…fluency is in essence the ability to repeat previous actions or thoughts more and more quickly without conscious thought." (p. 101)

Fawcett, A.J. and Nicolson, R.I. (2001). Dyslexia and The Role of The Cerebellum. In A.J. Fawcett (Ed.), Dyslexia: Theory & Good Practice. Philadelphia, PA: Whurr, pp. 89-105.

Dyslexia and The Cerebellum

Nicolson Said Bottom Line:

"…That means if you have a task that takes 4 hours for the non-dyslexic kid to learn, it will take twice as long for the dyslexic kid; 8 hours. But, its not linear. You have a task which takes 100 hours it will take 10 times as long. If you have a task that takes 10,000 hours it will take 100 times as long, and so on…Therefore if you have something like reading, writing and spelling which takes 100s…"

Dyslexia and The Cerebellum (Continued)

"…of hours that's the sort of thing in which dyslexic children are particularly adversely affected."

Nicolson, R., and Fawcett, A. (November, 2000). Dyslexia The Cerebellum and Phonological Skill . Paper presented at the International Dyslexia Association Annual Conference, Washington, DC.

Dyslexia and Procedural Training

- The ***Square Root Rule:***

  "The extra time needed for a dyslexic child to master a task is proportional to the square root of the time a non-dyslexic child takes." (Slide 45)

Fawcett, A. (November 5, 2004). Dyslexia and Learning. Paper presented at the 55th International Dyslexia Conference, Philadelphia, PA, from handout of slides, Number 45.

European Perspectives of AD/HD

Disorder of Attention, Motor Control and Perception (DAMP):

Swedish researchers have been doing longitudinal research since 1977 with a group of children with AD/HD and Developmental Coordination Disorder which they view as one disorder called DAMP. At age 22 30% of the children still met criteria for AD/HD and DCD.

Gillberg, C. (2001). ADHD with Comorbid Developmental Coordination Disorder: Long-Term Outcome in a Community Sample, ADHD Report, 9 (2), pp. 5-9

Gillberg, C., and Kadesjo, B. (2000). Attention-Deficit/Hyperactivity Disorder and Developmental Coordination Disorder. In T.E. Brown (Ed.), Attention-Deficit Disorders and Comorbidities in Children, Adolescents and Adults. Washington, DC: American Psychiatric Press, pp. 393-406.

The Neurology of the Combined Type of AD/HD

Barkley (2002B) stated there are three areas of the brain that are significantly different in those who are AD/HD:

1. The ***Orbital Prefrontal Cortex-Primarily the Right Side***
2. The ***Cerebellar Vermis-Primarily the Right Side***
3. The ***Basal Ganglia-Striatum and Globus Pallidus***

Barkley, R.A. (2002B). ADHD and Oppositional Defiant Children. Seminar presented February 19-20, Phoenix, AZ.

Barkley's 30% Rule for Combined AD/HD

People with Combined Type AD/HD tend to be on average 30% less mature in controlling their hyperactivity, impulsivity, and inattentiveness than their non-disabled age peers.

Barkley, R.A. (1998). ADHD in Children, Adolescents and Adults: Diagnosis, Assessment and Treatment. New England Educational Institute, Cape Cod Symposium (August), Pittsfield, MA.

Warning for Driver's Education Instructors with AD/HD Combined Types Students!

- The average 16 year old with Combined Type AD/HD functions like an 11 year old when it comes to controlling their hyperactivity, impulsivity and inattentiveness.
- How many of you would want an 11 year old behind the wheel of a car?

Barkley, R.A., Murphy, K.R. and Fischer, M. (2008). ADHD In Adults: What The Science Says. New York, NY: Guilford.

Warning for Driver's Education Instructors with AD/HD Combined Types Students!

- AD/HD teens are more likely to have driven a car illegally before they have their drivers license.
- They are less likely to be employing good driving habits.
- They will incur many more traffic citations, especially for speeding.
- They are four times more likely to be in an accident.
- They will have even more problems if they have Oppositional Defiant Disorder and/or Conduct Disorder with their AD/HD.
- Unmedicated people with AD/HD who are sober handle a car as well as a person who is not AD/HD who is legally drunk!

Barkley, R.A. (2006). Attention Deficit Hyperactivity Disorder, Third Edition. New York, NY, Guilford.

Warning: Driving and AD/HD

"Fortunately, the driving performance of adults with ADHD has been shown to improve with medication management, at least those aspects of poor driving likely to derive from ADHD itself." (p. 376)

Barkley, R.A., Murphy, K.R. and Fischer, M. (2008). ADHD In Adults: What The Science Says. New York, NY: Guilford.

Warning for Health Class Instructors!

- People with AD/HD may have a ***significantly reduced life expectancy*** due to an impulsive lack of concern for health related issues, exercise, diet, drugs, etc.

Barkley, R.A. (1998). Attention-Deficit Hyperactivity Disorder, Second Edition. New York, NY: Guilford.

- Spend significantly more time with them emphasizing the importance of good health and developing ways to insure they follow through with annual check-ups, etc.

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.

Exhaustion and Anxiety

Exhaustion and Learning Disorders

Roffman wrote, “One final ongoing issue that is worthy of mention for many with LD/ADHD is the problem of fatigue. The extra effort required to cope with the continued social and academic demands of schooling can be chronically exhausting.” (p. 217)

Roffman, A.J. (2000). Meeting The Challenge of Learning Disabilities In Adulthood. Baltimore, MD: Brookes.

LD Life Insight

"The process of continually compensating can be deeply tiring. Betty notes that she often is exhausted as a direct result of the enormous effort that she expends on building on her strengths and working around her weaknesses. She notes, 'You're always compensating and you're tired a lot." (p. 261)

Roffman, A. (2000). <u>Meeting the Challenge of Learning Disabilities in Adulthood</u>. Baltimore, MD: Brookes.

Mr. Waterman's Lost 6th Sense

- What is our 6th sense?
- Proprioception
- "No one understood what was wrong or why my life was such a struggle…Sometimes I wonder. It's been a huge mental drain on me and still takes an awful lot of cognitive energy to maintain my movements." (p. 18)

Azar, B. (June, 1998). Why Can't This Man Feel Whether, or Not He's Standing Up? Monitor of the American Psychological Association, 29 (6), pp. 48-49.

Mr. Waterman's Lost 6th Sense

Cole, J. (1995). Pride and a Daily Marathon. Boston, MA: MIT Press.

http://www.gla.ac.uk/departments/philosophy/Personnel/susan/RossDan/LossofProprioception.htm

Observation of an Autistic Genius:

- Temple Grandin said for those with autism spectrum disorders social adaptation must occur on a conscious level.
- I believe the same is true for many with Dyslexia, AD/HD, NVLD, etc.

Grandin, T. (1995). Thinking in Pictures and Other Reports from My Life with Autism. New York, NY: Vintage.

Anxiety and Learning Disorders/AD/HD

Roffman wrote, “Adults with LD/ADHD often experience pressure as they work to cope with their symptoms. Anxiety develops out of such day-to-day occurrences as the loss of yet another set of keys…” (p. 49)

Roffman, A.J. (2000). Meeting The Challenge of Learning Disabilities In Adulthood. Baltimore, MD: Brookes.

Summary Statement

Kevin T. Blake, Ph.D., P.L.C.'s Observation

- "If you have a neurosocial deficit (i.e., in the brain hardware for social interaction) you are forced to create software to compensate for it. That's hard and takes time and energy. It also takes an action which is for most people unconscious and makes it conscious, hence it will never be as "automatic and efficient" as an ability…"

Kevin T. Blake, Ph.D., P.L.C.'s Observation (Continued)

- "…Such compensation skills divide attention and make tasks which are by their nature not conscious more onerous and less efficient creating frustration. When additional stimuli is added on an unpredictable basis this requires a cognitive shift and these learned skills tend to break down which may lead to a feeling of vulnerability and anxiety…"

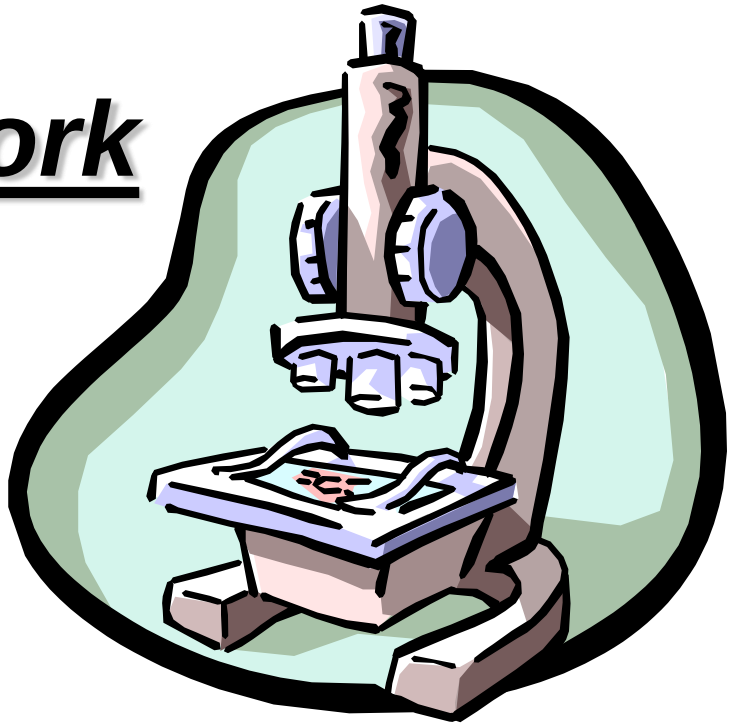
Kevin T. Blake, Ph.D., P.L.C.'s Observation (Continued)

- "…People with such disabilities tend to fatigue faster in social situations and perform cognitively less efficiently when engaged in their social 'skills' compensations.
- Those with neurosocial deficits are at risk of not being aware of and/or sensitive to cultural norms and symbols as well as their importance in social interaction. This unawareness may cause significant social rejection, anxiety and frustration for these individuals…"

Kevin T. Blake, Ph.D. P.L.C.'s Observation (Continued)

- An additional source of frustration and anxiety for individuals with these deficits is most peoples' social interactions are automatic and thus they frequently do not understand the struggles of those who must socialize on a cognitive level.

Your Tax Dollars at Work



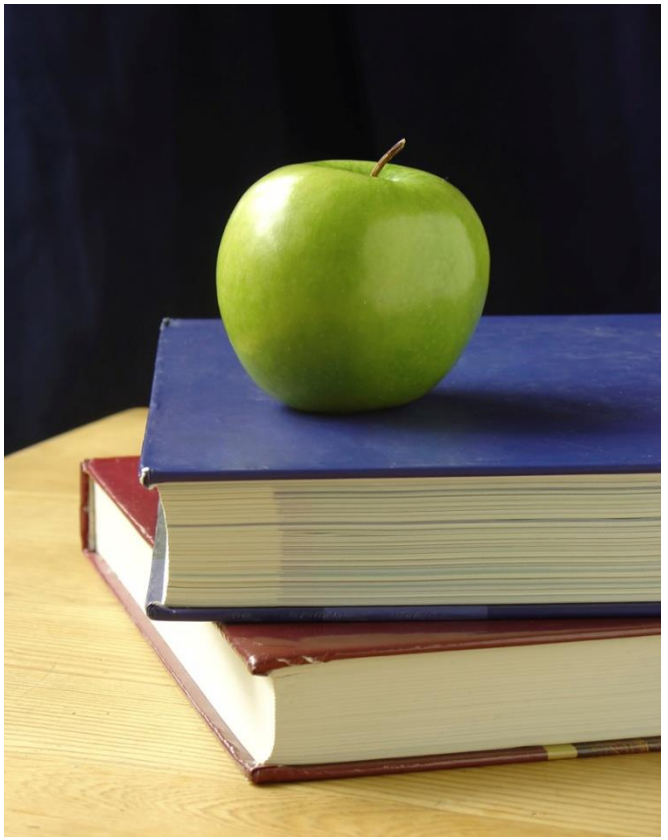
RESEARCH PROGRAM IN READING DEVELOPMENT, READING DISORDERS, AND READING INSTRUCTION

Initiated 1965

A Good Book That Summarizes this Research

- Fletcher, J.M., Lyon, G.R., Fuchs, L.S. and Barnes, M.A. (2007). Learning Disabilities: From Identification to Intervention. New York, NY: Guilford.

http://www.guilford.com/cgi-bin/cartscript.cgi?page=pr/fletcher.htm&dir=pp/neuropsych&cart_id=169929.5486



Your Tax Dollars At Work

- Run by the National Institute of Child Health and Development (NICHD)
- Which is part of the National Institute of Health (NIH)
- Study began in 1965 and continues today!
- As of 1999 over ***$150,000,000.00*** has been spent!
- Study now budgeted for ***$15,000,00.00*** per year!

Your Tax Dollars At Work

- Conducted at 42 sites in the U.S. and Europe
- Follow-up studies for over 14 years
- Much of the neurological research in this presentation comes from this study.
- China, England, Israel, Russia, Sweden and Turkey have conducted similar studies…

Lyon, G.R. (1999). In Celebration of Science in the Study of Reading Development, Reading Disorders and Reading Instruction. Paper presented at the International Dyslexia Association 50th Annual Anniversary Conference, November 4, 1999, Chicago, IL.

Your Tax Dollars At Work

- 30,000 scientific works from NICHD research
- 44,000 studied, 5 years old and up; with 5 year follow-ups
- No Child Left Behind
  - 38 to 40% overall illiteracy rate in U.S.
  - 70% illiteracy/African Americans
  - 65% illiteracy/Hispanic Americans
    - They don't have the English language literacy and speech experiences of other ethnicities.

Lyon, G.R. (Thursday, February 27, 2003). Application of Scientific Research Methods to the Study of Naming Deficits: Systematic Interventions to Improve Fluency in Word Reading Skills and Comprehension. Paper Presented at the 40th Annual Learning Disabilities Association Conference, Chicago, IL, Session T-39.

Your Tax Dollars At Work

- 48,000 children have been in the study as of 2004. The follow-up study is now 21 years.
- 3,800 in new adult study
- “2 to 6% of the population are the ‘Hard Core’ Dyslexics that will not improve with ‘Good Instruction’. They have the full dyslexic neurology and need multi-sensory approaches.”

Lyon, G.R. (March 19, 2004). A Summary of Current NICHD Research Findings in Math and Reading Development in English Speaking Children and Plans For Future Research. Seminar Presented at the 41st Annual Learning Disabilities Association of America International Conference, Atlanta, Georgia, March 17 to March 20, 2004.

Education Sciences Reform Act of 2002

- Bill designed to transform education into an "evidenced-based field."
- School curriculum choice must be based on empirical methods, adequate data analysis, reliable and valid measurements, experimental design, replicability and expert scrutiny.
- Created the Institute of Educational Sciences in the Department of Education.

Author (No Date). Establishing Schools Attuned as an Evidence-Based Program: Executive Summary. From website:

Author (No Date). Institute of Education Sciences (Home Page). From website: http://ies.ed.gov/.

Your Tax Dollars At Work

- 3 to 5% of community samples experience Major Depressive Disorder in lifetime.
- Dysthymic Disorder is 3%.
- 3 to 13% Social Phobia
- 3 to 5% Generalized Anxiety Disorder
- 0.4 to 1.6% Bipolar Disorder

American Psychological Association (1994). Diagnostic and Statistical Manual of Mental Disorders, IV Edition. Washington, DC: American Psychiatric Association.

Reading Disorder-Dyslexia

"The idea that learning to read is just like learning to speak is accepted by no responsible linguist, psychologist, or cognitive scientist in the research community." (pp. 285-286)

Stanovich, K.E. (1994). Romance and Reality. The Reading Teacher, 47, pp. 280-291.

Reading Disorder-Dyslexia

The Symptoms of Dyslexia are:

1. Weak Phonemic Awareness

2. Slow, Rapid Automatized Naming

3. Poor Orthographic Processing

4. Exceptionally Poor Automatization

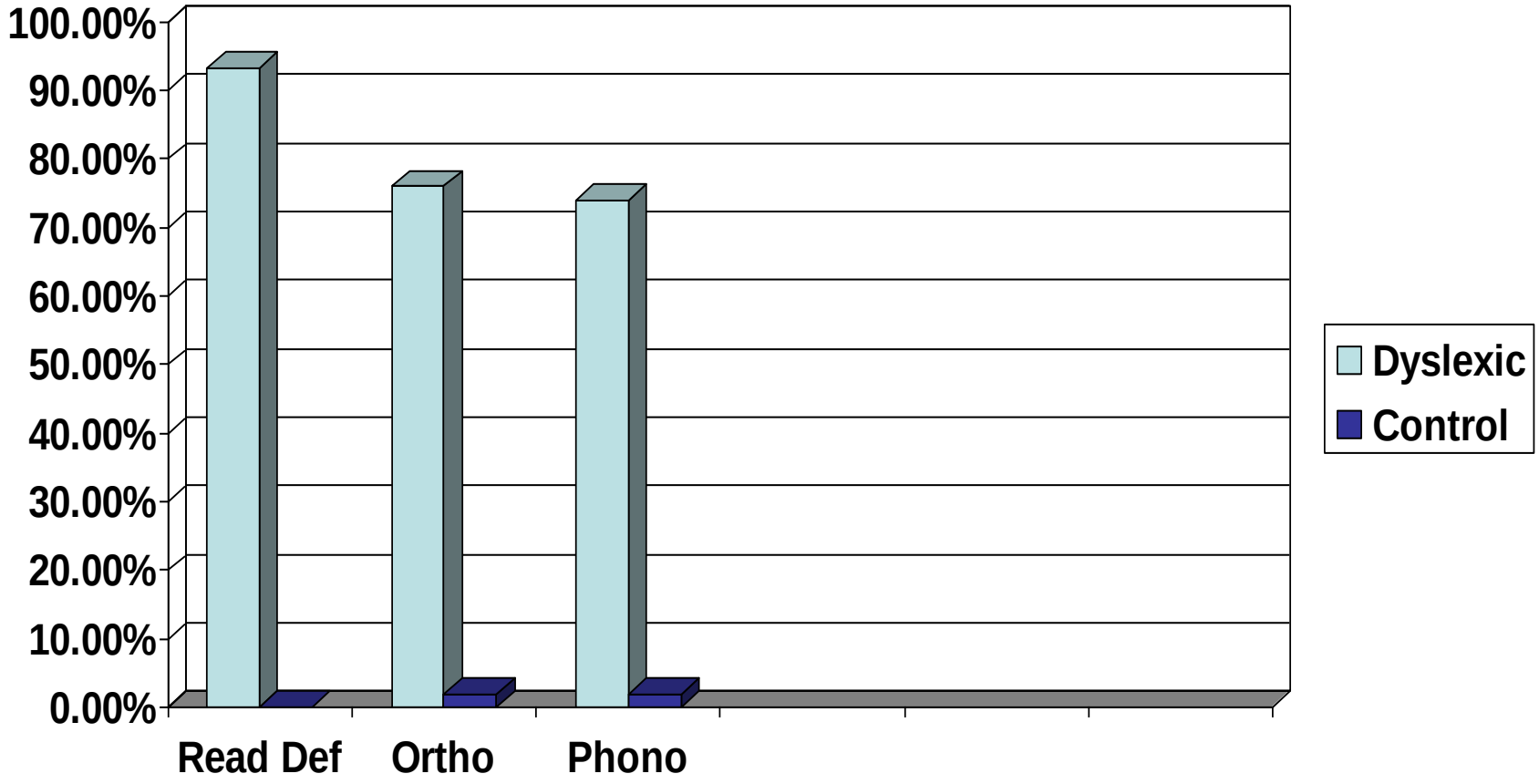
5. Poor Coordination

Fawcett, A.J. (2001). Dyslexia: Theory & Good Practice. Philadelphia, PA: Whurr.

Blake, K.. (2003) Personal Observation.

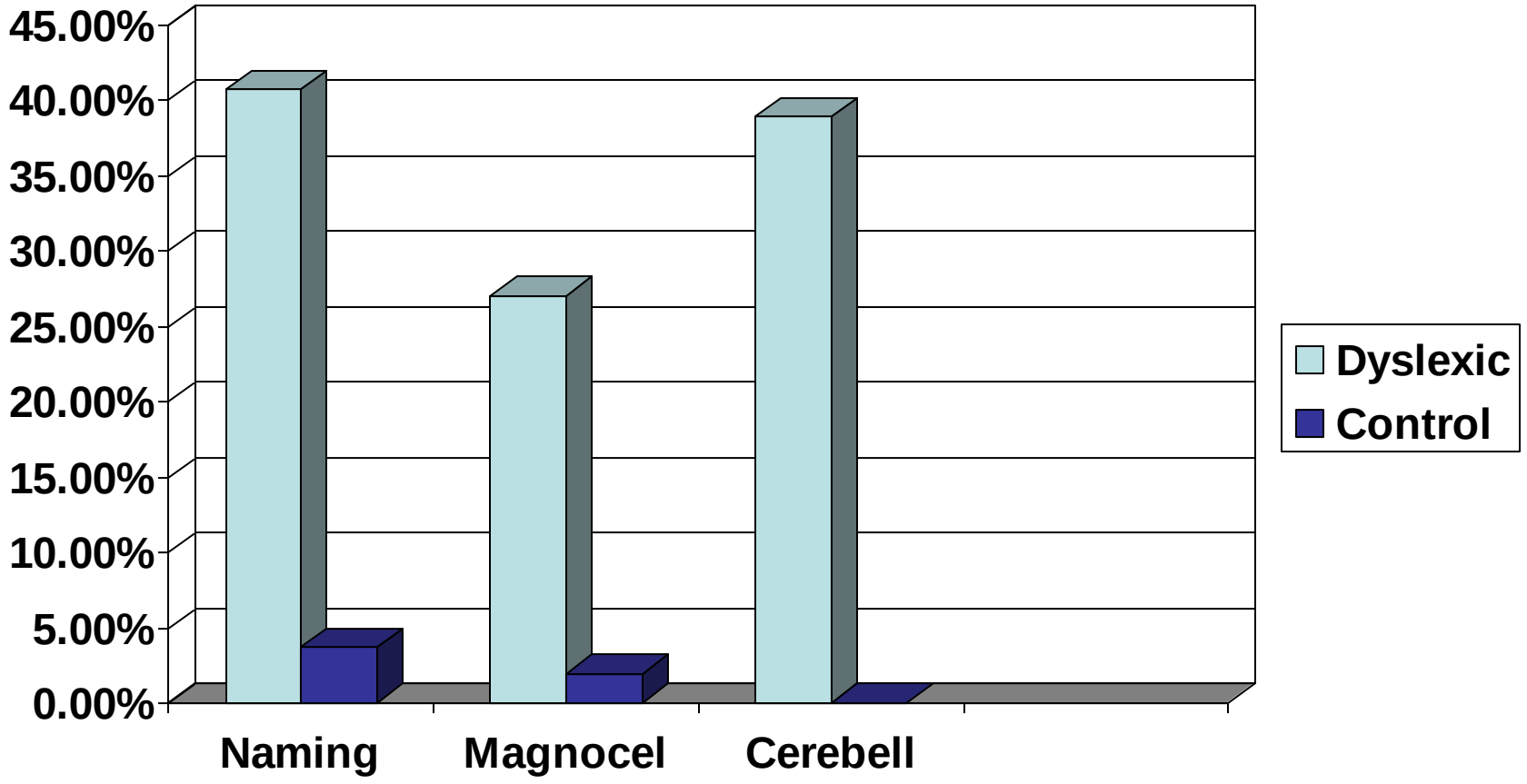
Reading Disorder-Dyslexia

Reid, A.A. (November 11, 2006). Cognitive Profiles of Individuals with Developmental Dyslexia: Insights From a Large Sample Study. Preliminary Findings . Paper presented at the 57th Annual International Dyslexia Association Conference, Indianapolis, IN.



Reading Disorder-Dyslexia

Reid, A.A. (November 11, 2006). Cognitive Profiles of Individuals with Developmental Dyslexia: Insights From a Large Sample Study. Preliminary Findings . Paper presented at the 57th Annual International Dyslexia Association Conference, Indianapolis, IN.



Reading Disorder-Dyslexia

- Some Dyslexics had all the symptoms.
- Some only had one.
- Four had none of the aforementioned deficits.

Reid, A.A. (November 11, 2006). Cognitive Profiles of Individuals with Developmental Dyslexia: Insights From a Large Sample Study. Preliminary Findings . Paper presented at the 57th Annual International Dyslexia Association Conference, Indianapolis, IN.

Definition Of Dyslexia

"Dyslexia is a specific learning disability that is neurological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include…

Definition Of Dyslexia
(Continued)

…problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge."

Adopted by the National Institutes of Health (NIH) and the International Dyslexia Association (IDA) 2002

International Dyslexia Association (April 20, 2005). IDA/NIH Adopts A New Definition of Dyslexia. From website: www.interdys.org/serlet/compose?section_id=8&page_id=69, Page 1 0f 2

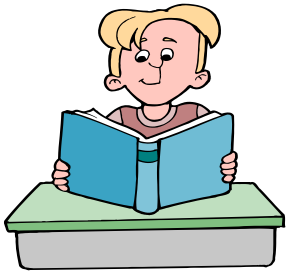
THE PAOMNNEHAL PWEOR OF THE HMUAN MNID

- **Aoccdrnig to rscheearch at Cmabrigde Uinervisy, it deosn't mttaer in waht oredr the ltteers in a wrod are, the olny iprmoatnt tihng is taht the frist and lsat ltteer be in the rghit pclae. The rset can be a taotl mses and you can sitll raed it wouthit a porbelm.**

Davis, M. (2003). www.mrc-cbu.cam.ac.uk/~mattd/Cmabrigde/

Rawlinson, G. (1999). Reibadailty. New Scientist. 162 (2188), p. 55. From website: www.mrc-cbu.cam.ac.uk/~mattd/Cmabrigde/newscientist_letter.html

“LEXDEXIA”



- “reversals” (seeing “was” as “saw”) and “rotations” (“b” as “p”; “p” as “d”, etc.) occur in most children up through fourth grade. This is typical in the development of visual orthographic memory.
- Only about 7% of adult dyslexics have this concern.
- **Dyslexia is <u>not</u> seeing the word “WAS” as “SAW”.**

Anderson, C.W., Jr. (January 23, 2006). Personal Communication.

Badian, N. A. (2005). Does a Visual-Orthographic Deficit Contribute to Reading Disability? <u>Annals of Dyslexia</u>, <u>55</u> (1), pp. 28-52.

Social Anxiety and Shyness

Social Anxiety/ Shyness

- Fight or Flight Response

Benson, H. (1983). The Relaxation Response. New York, NY: Outlet Books.

Benson, H. (1994). Beyond The Relaxation Response. New York, NY: Berkley Books.

Fight or Flight Response Vs. ***Tend and Befriend Response***

- ***Shelley Taylor, Ph.D.***

Taylor, S.E. (2002). The Tending Response. New York, NY: Holt.

Tend and Befriend

"Tend-and-befriend is a behavioural pattern exhibited by human beings and some animal species when under threat. It refers to protection of offspring (tending) and seeking out of the social group for joint protection (befriending)…Tend and befriend has been heavily studied in female animals and women. One reason for this is that estrogen enhances the effects of oxytocin which as noted, is believed to be an important biological underpinning of tend and befriend." (p. 1 of 3)

Wikipedia: http://en.wikipedia.org/wiki/Tend_and_befriend

Tend and Befriend

Taylor, S.E., Klien, L.C., Lewis, B.P., Gruenwald, T.A., Gurung, R.A.R. and Updegraff, J.A. (2002). Biobehavioral Responses to Stress in Females: Tend-and-Befriend, Not Fight-or-Flight. Psychological Review, 107 (3), pp. 411-429.

Those at Risk for Social Phobia

- Learning Disabled
- Those with AD/HD
- Those with NVLD
- Those with Asperger's Disorder

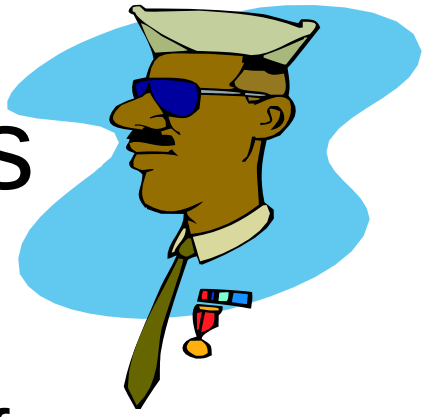
Spreen, O. (1988). Learning Disabled Children Grow-Up: A Follow-Up Into Adulthood. New York, NY: Oxford Press.

Murphy, K.R. , and Le Vert, S. (1995). Out of The Fog: Treatment Options and CopingStrategies for Adults with Attention Deficit Disorder. New York, NY: Hyperion.

Hooper, S.R. and Olley, J.G. (1996). Psychological Comorbidity in Adults with Learning Disabilities. In N. Gregg, C. Hoy and A.F. Gay (Eds.), Adults with Learning Disabilities: Theoretical and Practical Perspectives. New York, NY: Guilford, pp. 162-183.

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

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.

"Stereotype Threat"

- "…the threat of being viewed through the lens of a negative stereotype, or fear of doing something that would inadvertently confirm that stereotype." (p. 4)
- Spotlight Anxiety (William Cross) and over trying
- Hard work and persistence always pays off.
- Let them know they are not being judged on their LD and/or AD/HD, etc. Just on the "overall" quality of their work.

Steele, C.M. (August 1999). Thin Ice: "Stereotype Threat" and Black College Students. Atlantic Monthly, Digital Edition. From website: www.theatlantic.com/issues/99aug/9908stereotype.htm , pp.1- 8.

Gregg, N., et. al. (March 18, 2004). Equity and Accommodations: Elementary through Postsecondary. Seminar Presented at the 41st Annual Learning Disabilities International Conference, Atlanta, GE, Session T-29.

Social Anxiety & Shyness

- 10 to 15% of newborns have an inherited enhanced startle response.
- A 20 year follow-up study of such children with fMRI imaging indicated they are still shy neurologically, especially to strangers.

Zimbardo, P.G. (2000). The Personal and Social Dynamics of Shyness: Adults and Children. Paper presented at the 50th Annual Arizona Psychological Association Conference, October 21, 2000,Tucson, AZ.

Jozefowicz, C. (2003). Once Shy, Always Shy?, Psychology Today, 36 (5), p. 27.

Social Anxiety and Shyness

- The amygdala is activated in the genetically shy when they are shown pictures of unfamiliar people. This would tend to indicate they feel fear and are overly vigilant when they see strangers. This does not occur in the non-shy.

Jozefowicz, C. (2003). Once Shy, Always Shy?, Psychology Today, 36 (5), p. 27.

Social Anxiety and Shyness

- 10% of the population is genetically shy.
- Severe shyness can lead to almost autistic-like (schizophrenic) thinking. The Unibomber (Theodore Kazynski) was pathologically shy.

Zimbardo, P.G. (2000). The Personal and Social Dynamics of Shyness: Adults and Children. Paper presented at the 50th Annual Arizona Psychological Association Conference, October 21, 2000,Tucson, AZ.

Shyness Defined

- “Shyness may be defined experimentally as discomfort or inhibition in interpersonal situations that interferes with pursuing one’s interpersonal or professional goals.” (p. 497)

Henderson, L. and Zimbardo, P. (1998). Shyness. Encyclopedia of Mental Health, 3, p. 497.

Social Phobia

- Two Subtypes:
  1. Specific Type- public speaking, eating in public, etc.
  2. Generalized Type-very broad
  - These people shy away from treatment: 36% of those who meet DSM criteria actually get treatment

Dittmann, M. (July/August, 2005). Stemming Social Phobia. Monitor On Psychology, 36 (7), pp. 92-94.

Shyness in a Nutshell

- “S”ELF-BLAME AND SHAME
- “A”VOIDANCE
- “D”ISTRESS
- “F”EAR OF NEGATIVE EVALUATION
- “I” MUST BUT I CAN’T
- “X”-POSURE: FEAR OF BOTH FAILURE AND SUCCESS
- “S”ELF SABOTAGE

Zimbardo, P.G. (2000). The Personal and Social Dynamics of Shyness: Adults and Children. Paper presented at the 50th Annual Arizona Psychological Association Conference, October 21, 2000,Tucson, AZ.

Shyness Treatment

- I asked Zimbardo what he thought those who had neurobiological disorders who were genetically shy needed most and he said, “Training in the skills to make legitimate excuses.”

Zimbardo, P.G. (2000). <u>The Personal and Social Dynamics of Shyness: Adults and Children</u>. Paper presented at the 50th Annual Arizona Psychological Association Conference, October 21, 2000,Tucson, AZ.

Shyness Treatment

- Cognitive Behavioral Therapy and Antidepressant Medication works 80% of the time with 5 year follow-up. Thought to be best method of treatment (Richard Heimberg, Ph.D.).

Dittmann, M. (July/August, 2005). Stemming Social Phobia. Monitor On Psychology, 36 (7), pp. 92-94.

Treatment of Social Anxiety/Shyness

- Zimbardo (2000) described a 26 week treatment program at his shyness clinic that includes the following: Cognitive Behavior Modification/Cognitive Restructuring, Self-Esteem Restructuring, Support Groups, Practice, Medications, Video Social Skills Training, Encouragement, etc.
- www.shyness.com and www.shynessinstitute.com

Zimbardo, P.G. (2000). The Personal and Social Dynamics of Shyness: Adults and Children. Paper presented at the 50th Annual Arizona Psychological Association Conference, October 21, 2000,Tucson, AZ.

Treatment of Social Anxiety/Shyness

- Aerobic Exercise:
  - "As for the trait, the majority of studies show that aerobic exercise significantly alleviates symptoms of any anxiety disorder." (p. 92)

Ratey, J.J. (2008). Spark: The Revolutionary New Science of Exercise and The Brain. New York, NY: Little, Brown.

Treatment of Social Anxiety/Shyness

Aerobic Exercise "Dosage":

"Just multiply your body weight by eight to figure out how much you should be burning for the high dose, and then head to the gym to find out how many calories you burn during a given workout (most aerobic machines do this for you). If you weigh 150 pounds and burn 200 calories in thirty minutes on the elliptical trainer, you'd want to do six sessions a week to meet the high dose." (p. 138)

Ratey, J.J. (2008). Spark: The Revolutionary New Science of Exercise and The Brain. New York, NY: Little, Brown.

Good Resources on Exercise and Counseling

- Novotney, A. (July/August 2008). Get Your Clients Moving: Ten Tips to Incorporate Exercise Into Your Treatment Arsenal. Monitor On Psychology, 39 (7), pp. 68-69.
- Ratey, J.J. (2008). Spark: The Revolutionary New Science of Exercise and The Brain. New York, NY: Little, Brown.
- ***Always consult a physician before starting an exercise program!***

People and Organizations Who Can Help With Social Anxiety/Shyness

- American Psychiatric Association: www.apa@psych.org
- American Psychological Association: www.apa.org
- Amerian Association of Mariage and Family Therapists: www.aamft.org
- National Board of Certified Counselors: www.nbcc@nbcc.org
- National Association of Social Workers: www.naswdc.org
- Anxiety Disorder Association of America: www.adaa.org

Emotional Salience Landscape Difficulties- Mirror Neurons

- Problems in the amyadula and lack of emotional salience landscape may account for sensory sensitivity.
- These problems are found in those with Autism Spectrum Disorders.
- Insula/Amygdala : pain & disgust

Ramachandran, V.S. and Oberman, L.M. (November, 2006). Broken Mirrors. Scientific American, 296(5), pp. 62-69.

Emotional Salience Landscape Difficulties- Mirror Neurons

"In a typical child, sensory information is relayed to the amygdala, the gateway to the emotion-regulation limbic system. Using input from stored knowledge, the amygdala determines how the child should respond emotionally to each stimulus, creating a salience landscape of the child's environment. In children with autism, though the connections between the sensory areas and the amydala may be altered, resulting in extreme emotional responses to trivial events and objects." (p. 68)

Ramachandran, V.S. and Oberman, L.M. (November, 2006). Broken Mirrors. Scientific American, 296(5), pp. 62-69.

Emotional Salience Landscape Difficulties- Mirror Neurons

When the child with Autism Spectrum Disorder looks into another's eyes:

1. The "…altered connection between the cortex and amygdala distorts (the) child's response.
2. (The) Amygdala triggers autonomous nervous system, raising heart rate.
3. (As a result the) Child looks away to reduce stress." (p. 68)

Ramachandran, V.S. and Oberman, L.M. (November, 2006). Broken Mirrors. Scientific American, 296(5), pp. 62-69.

Emotional Salience Landscape Difficulties- Mirror Neurons

"People with autism show reduced mirror neuron activity in the inferior frontal gyrus, a part of the brain's premotor cortex, perhaps explaining their inability to assess the intentions of others. Dysfunctions of mirror neurons in the insula and anterior cingulate cortex may cause related symptoms, such as the absence of empathy, and deficits in the angular gyrus may result in language difficulties. People with autism also have structural changes in the cerebellum and brain stem." (p. 65)

Ramachandran, V.S. and Oberman, L.M. (November, 2006). Broken Mirrors. Scientific American, 296(5), pp. 62-69.

Oxytocin & Autism

Those with Autism Spectrum Disorders (ASD) have been found to have a genetic anomaly in a gene that makes oxytocin. As a result they have too little of the hormone and have difficulty relating to others.

Jacob, S., Brune, C.W., Carter, C.S., Leventhal, B.L., Lord, C. and Cook, E.H., Jr. (April 24, 2007). Association of the Oxytocin Receptor Gene (OXTR) in Caucasian Children and Adolescents with Autism. Neuroscience Letters, 417 (1), pp. 6-9. From Website: http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6T0G-4MYVGBW-5&

Yrigollen, C.M., Han, S.S., Kochetkova, A., Babitz, T., Chang, J.T., Volkmar, F., Leckman, J.F. and Grigerko, E.L. (January 21, 2008). Genes Controlling Affiliative Behavior as Candidate Genes for Autism. Biological Psychiatry. From Website: http://www.journals.elsevierhealth.com/periodicals/bps/article/S0006-3223(07)01143-2ab.

Creating More Oxytocin

- Interactive touch between humans can produce more oxytocin in the brain.

Author (2008). Oxytocin: World's Expert Talks About This Calming Hormone: An Interview with Kerstin Uvas-Moberg, M.D., Ph.D. Life Science Foundation. From Website: http://www.lifesciencefoundation.org/coxytocin.html.

Oxytocin and Squeezing

Many Native American cultures used cradleboards to carry their infants.

Emotional Salience Landscape Difficulties-Mirror Neurons

- Temple Grandin's "squeeze machine"
- Hirstein's "squeeze vest" Elmhurst College
- Risperidone, MDMA (ecstasy)
- Biofeedback
- Under Armor-- Compression underwear: www.**underarmour**.com

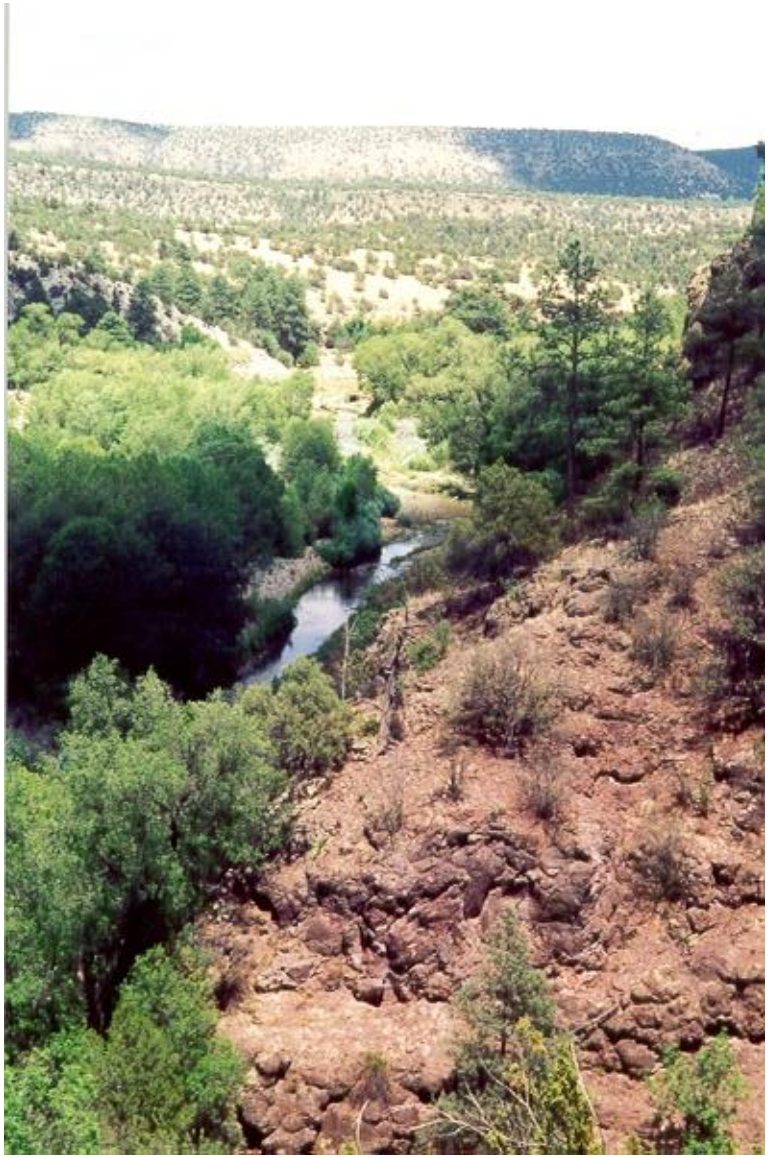
Grandin, T (1992). Calming Effects of Deep Touch Pressure in Patients with Autism, College Students, and Animals. Journal of Child and Adolescent Psychopharmacolgy, 1 (2). From website: www.grandin.com/inc/squeeze.html

Ramachandran, V.S. and Oberman, L.M. (November, 2006). Broken Mirrors. Scientific American, 296(5), pp. 62-69.

Author (1997). Use of "Atypical" Neuroleptics in the Treatment of PDDs. MedScape Psychiatry & Mental Health e Journal, 2 (4): www.medscape.com/viewarticle/430897_5

THE ABOVE ARE EXPERIMENTAL TREATMENTS!!!!!

Memory Disorders



Memory Problems Everyone Has

- Transience-problems accessing memory over time
- Absent-mindedness: Lapses in attention
- Blocking-Tip of the tongue experience
- Suggestibility-The incorporation of misinformation into memory
- Bias-Altering memory to fit beliefs
- Misattribution-Believing you heard something you didn't.

Murray, B. (October, 2003). Convention Award-Winner Daniel Schacter Explained the Ways Memory Tricks Us. Monitor On Psychology, 34 (9), pp. 28-29.

Memory Disorders

- Dysnomia:
  - "…is a word-finding problem in remembering and expressing words." (p. 373)
  - "Dyslexic people are slower at naming series of various types of familiar stimulus items– objects, colors, numbers, letters." (p. 29)
  - This is part of the Rapid Automatized Naming Deficit, or "Double Deficit" of dyslexia.

Lerner, J. (1997). Learning Disabilities: Theories Diagnosis, and Teaching Strategies, 7th Edition. Boston, MA: Houghton Mifflin.

Clark, D.B. (1988). Dyslexia: Theory and Practice of Remedial Instruction. Parkton, MD: York.

Wolf, M., and O'Brien, B. (2001). On Issues of Time, Fluency, and Intervention. In A.J. Fawcett (Ed.), Dyslexia: Theory and Good Practice. Philadelphia, PA: Whurr, pp. 124-140.

Two General Memory Systems

- ***Declarative Memory***: Remembering what-Facts and Events
- ***Procedural Memory:*** Knowing how to do something
- Proficient Reading is a skill. A product of procedural memory
- With procedural memory robust gains in knowledge are made after training is terminated.
- Train until the person's new behavior plateaus, stop training then allow to sleep. The next day they will have improved behavior and less errors.

Two Memory Systems (Continued)

- This will not happen if the person is not allowed to sleep and/or if they are then taught a competing task.
- If the training situation is considered novel, learning will continue to increase.

Karni, A. (November 3, 2004). <u>Brain Basis of Skill Acquisition and Learning: How do they Relate to Reading?</u> Paper presented during the Neural Basis of Reading and Other Forms of Skills Acquisition symposium of the 55th Annual International Dyslexia Association Conference, Philadelphia, PA, Session W-1.

Sleep and Memory

- "…sleep allows us to process and retain new memories and skills." (p. 58)
- Deprive sleep block training improvement in skill
- "Evidence for sleep's effect on declative memory is much weaker than its effect on procedural memory." (p. 59)

Winerman, L. (January, 2006). Let's Sleep On It. Monitor On Psycholoy, 37 (1), pp. 58-60: Discussing – Strickgold, R. (2005). Sleep-Dependent Memory Consolidation. Nature, 437 (7063), pp. 1272-1278.

Case study of a Dyslexic

- Male college student
- 21 years old
- 3.8 GPA in Electrical Engineering
- 145 Full Scale IQ
- Excellent social and conversational skills
- Dresses and acts age appropriate
- Mildly depressed (Dx: Dysthymic Disorder)
- Severe Reading Disorder/Dyslexia

Case study of a Dyslexic

- "I don't recognize my own face!"
- ***Developmental Prosopagnosia***

Problems Remembering Faces

- ***Prosopagnosia:*** Inability to recognize faces, even one's own face." (p. 1168)

Taber's (1981). Taber's Cyclopedic Medical Dictionary. Philadelphia, PA:F.A. Davis

- **Joaachim Bodamer, M.D. 1947:** German soldiers with brain injuries who could no longer see faces. Coined term. "*Prosopon" meaning face + "agnosia" meaning nonrecognition from Greek.*

Grueter, T. (August/September, 2007). Forgetting Faces. Scientific American: Mind, 18 (4), 68-73.

Subtypes of Prosopagnosia

- Acquired Prosopagnosia: Caused by insult to the brain; what Bodamer wrote about in 1947.
- Developmental Prosopagnosia: "…characterized by severely impaired face recognition. Individuals with this disorder, which runs in families, have no history of brain damage and intact early visual systems." (p. 166)

Grueter, T. (August/September, 2007). Forgetting Faces. Scientific American: Mind, 18 (4), 68-73.

Duchaine, B.C. and Nakayama, K. (2006). Developmental Prosopagnosia: A Window to Content –Specific Face Processing. Current Opinion in Neurobiology, 16, 166-173.

Developmental Prosopagnosia

"Developmental prosopagnosics (DPs) have not suffered any obvious brain damage, yet they have deficits in face recognition that can be as severe and as selective as those seen in acquired prosopagnosics." (P. 166)

Duchaine, B.C. and Nakayama, K. (2006). Developmental Prosopagnosia: A Window to Content –Specific Face Processing. Current Opinion in Neurobiology, 16, 166-173.

Subtypes of Prosopagnosia

- Possible Associated Conditions:
  - Problems with recognition of facial expression of emotion
  - Problems with gender of face discrimination
  - Problems with age of face discrimination
  - Problems with TOPOGRAPHAGNOSIA: difficulty with personal navigation; getting lost easily
  - Asperger's Disorder

Galaburda, A.M. and Duchaine, B.C. (2003). Developmental Disorders of Vision. Neurologic Clinics, 21 (3), 687-707.

Subtypes of Prosopagnosia

- Possible Associated Conditions:
  - Central Auditory Processing Disorder (CAPD):

    "The inability to understand spoken language in a meaningful way in the absence of what is commonly considered a hearing loss." (Sineps and Hunter, 1997)

Duchaine, B.C. (2000). Developmental Prosopagnosia with Normal Configural Processing. Cognitive Neuroscience and Neuropsychology. 11 (1), 79-82.

Choisser, B. (August, 14, 2007). Face Blind! From website: www.choisser.com/faceblind/about.html, p. 7 of 10.

Sineps, D. and Hunter, L. (1997). I Can Hear But…When Auditory Perception and Listening Break Down: Implications For Language and Reading. Paper presented at the International Dyslexia Association Annual Conference, Minneapolis, MN, November 13, 1997, Session T-45.

Prosopagnosia

- Remembering Faces:
  - This is an important ability for survival.
    - It lets you know “friends and foes.”
    - It helps you maintain relationships.
    - It helps you remember the social status of others.

Ratey, J.J. (2001). A User’s Guide to the Brain: Perception, Attention and the Four Theaters of the Brain. New York, NY: Vintage.

Developmental Prosopagnosia

- Affects 2 to 3 percent of the population
- That equates to 6,000,000 Americans!
- Those affected often know something is wrong, but they don't know exactly what.

Goldberg, C. (June 14, 2006). When Faces Have No Name. The Boston Globe. From website: www.boston.com/yourlife/health/diseases/articles/2006/06/14/when_faces_have_no_name/

Grueter, T. (August/September, 2007). Forgetting Faces. Scientific American: Mind, 18 (4), 68-73.

Symptoms of Prosopagnosia

- Extreme difficultly recognizing faces. Even with a person who is well known by the sufferer (i.e., a parent, spouse, best friend, etc.).
- Appears aloof/arrogant, does not respond to people they “know” when they see them.
- Often complain they cannot follow movies or TV shows because they cannot remember the identity of characters.
- They tend to recognize people by hair, gait, clothing, voice, context or other information.

Author (August 14, 2007). www.faceblind.org/research, p. 1 of 3.

Additional Symptoms of Prosopagnosia found in Children

- It may take them months to recognize their classmates.
- School transition may be a problem.
- Extreme separation anxiety and stranger wariness may be present.
- Changes in peoples' appearance (i.e., new glasses, new hair style, etc.) may be a problem.
- Feelings of frustration, isolation and embarrassment

Grueter, T. (August/September, 2007). Forgetting Faces. Scientific American: Mind, 18 (4), 68-73.

Face Perception

- The right Fusiform Gyrus typically does not respond to objects.
- This area reorganizes faces into wholes.
- Inverted faces are more difficult to process than upright faces.
- The fusiform gyrus helps to differentiate between visually similar stimuli.
- Greebles-novices treat them as objects and experts treat them in a holistic manner.

Gauthier, I. (November 3, 2004). Face Processing: Is It Hard-wired or Learned? Evidence from Brain Imaging Studies. Paper presented at the 55th Annual International Conference seminar, *The Neural Basis of Reading and Other Forms of Skill Acquisition,* Philadelphia, PA, Session: W-1.

Face Perception

- Adults with Autism lack specialization for faces in the right fusiform gyrus, they use it for other things: toilet plungers, etc.
- Left fusiform gyrus ("Word Form Area") responds somewhat to strings of letters of the same font and to real words not non-words.
- Letters are not processed like shapes or strings.

Gauthier, I. (November 3, 2004). Face Processing: Is It Hard-wired or Learned? Evidence from Brain Imaging Studies. Paper presented at the 55th Annual International Conference seminar, *The Neural Basis of Reading and Other Forms of Skill Acquisition,* Philadelphia, PA, Session: W-1.

Face Perception

- Bonobos, Chimpanzees and Humans all can recognize faces and facial expressions.
- "Chimpanzees can use facial features to recognize both kin and unfamiliar conspecifics, and to categorize facial expression of other chimpanzees." (Schmidt & Cohn, 2001, p. 20)
- Bonobos are capable of self-recognition.

Gaspar, A. (June, 2006). Universals and Individuality in Facial Behavior – Past and Future of an Evolutionary Perspective. Acta Ethologia, 9 (1), 1-14 (From abstract).

Schmidt, K.L. and Cohn, J.F. (2001). Human Facial Expressions as Adaptations: Evolutionary Questions in Facial Expression Research. Yearbook of Physical Anthropology, 44 (3), 3-24.

Westergaard, G.C. (March, 1994). The Responses of Bonobos (Pan Panisus) to Their Mirror Images: Evidence of Self-recognition. Human Evolution, 9 (4), 273-279 (From abstract).

Face Perception

- "Our results show that a man with severe prosopagnosia performed normally throughout the standard greeble training procedure. These findings indicate face recognition and greeble recognition rely on separate mechanisms." (Duchaine, et.al., August, 2004)

Duchaine, B.C., Dingle, K., Butterworth, E. and Nakayama, K. (August, 2004). Normal Greeble Learning in a Severe Case of Developmental Prosopagnosia. Neuron, 43 (4), pp. 469-473 (From abstract).

Face Perception

- The Fusiform Face Area (FFA) responds much more to faces than to other objects.
- Nine different labs have found that those with Autism Spectrum Disorders have a hypoactivation of the FFA when viewing faces.
- Developmental Prosopagnosia and Developmental Agnosia are separate disorders.

Schultz, R.T. (2005). Developmental Deficits in Social Perception in Autism: The Role of the Amygdala and Fusiform Face Area. International Journal of Developmental Neuroscience, 23, 125-141.

Duchaine, B. and Nakayama, K. (2005). Dissociations of Face and Object Recognition in Developmental Prosopagnosia. Journal of Cognitive Neuroscience, 17, 249-261 (From Abstract).

Developmental Prosopagnosia

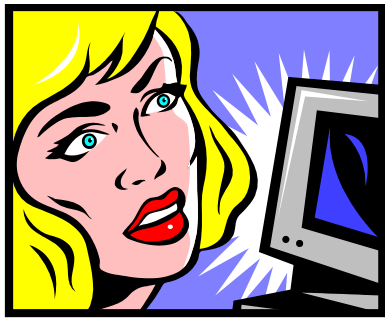
- “The hereditary type of prosopagnosia has an autosomal dominant type of inheritence. This means that men and women are affected in equal numbers. In our experience women are more willing to talk about their face recognition problems, though.” (Thomas Grueter, M.D.)
- If one parent has Prosopagnosia their child has a 50% chance of having it.

Grueter, T. (August 14, 2007). Personal Communication.

Grueter, T. (August/September, 2007). Forgetting Faces. Scientific American: Mind, 18 (4), 68-73.

Kennerknerht, I., Grueter, T., Wellinh, B, Wentzek, S, Horst, J., Edwards, S. and Gueter, M. (June, 2006). First Report of Prevalence of Non-Syndromic Hereditary Prosopagnosia. American Journal of Medical Genetics, Part A, 140A (15), Pages 1617-1622 (From abstract).

Whose at Risk for Prosopagnosia?



- Remembering Faces:
  - LD and AD/HD people often have problems remembering faces.

Roffman, A.J. (2000). Meeting The Challenge of Learning Disabilities In Adulthood. Baltimore, MD: Brookes.

  - Those with Asperger's Disorder are at risk for not remembering faces.

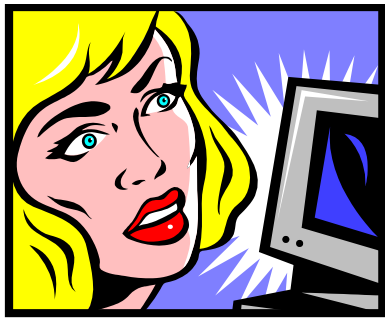
Attwood, T. (2007). The Complete Guide to Asperger's Syndrome. Philadelphia, PA: Jessica Kingsley, p. 130.

Prosopagnosia and NVLD (Nonverbal Learning Disorders)

"Hence, it appears that children with NLD have a specific deficit on immediate memory for faces. This facial memory deficit may be linked to a deficit in right hemisphere functioning which has already been implicated in facial processing and may also be linked with other disorders (e.g., autism spectrum disorder) in which similar facial processing deficits have been documented." (p. 1-2)

Liddell, G.A. and Rasmussen, C. (August, 2005). Memory Profile of Children with Nonverbal Learning Disability. Learning Disabilities Research and Practice, 20 (3), 137-141 (From abstract).

Prosopagnosia and Autism Spectrum Disorders

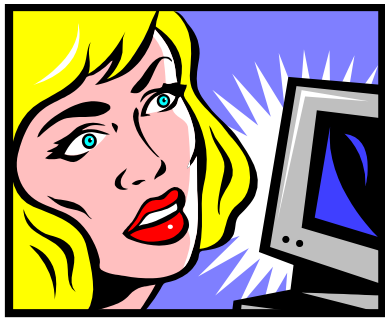


"Although not part of current diagnostic criteria, much evidence suggests that persons with ASD have marked deficits in face perception." (p. 127)

Schultz, R.T. (2005). Developmental Deficits in Social Perception in Autism: The Role of the Amygdala and Fusiform Face Area. International Journal of Developmental Neuroscience, 23, 125-141.

Bradley Duchaine on Prosopagnosia

- 5.7% of those with Autism Spectrum Disorders
- 8.6% with AD/HD
- 6% with Dyslexia
- Out of 312 subjects
- “I have certainly heard from many prosopagnosics with dyslexia, but I’ve never seen reason to believe that there is a higher than normal prevalence of dyslexia among prosopagnosics.”



Duchaine, B. (August 24, 2006). Personal Communication.
Duchaine, B. (August 29, 2006). Personal Communication.

Thomas Grueter on Dyslexia with Prosopagnosia

- “In our sample of about 200 congenital prosopagnosics, dyslexia is no more frequent than in the general population. Currently, we have no indication of a connection.”
- “In most people, face recognition is preferentially performed in the right hemisphere, while reading mostly employs the left hemisphere. Only a general neural dysfunction or structural brain deficit (as in some cases of PDD) would cause both functions to be impaired at the same time.”

Grueter, T. (August 8, 2007). Personal Communication.

Percentage of Hard Core Dyslexics

- "…reading disabilities in general have historically generated prevalence estimates of at least 10-15 in the school-age population." (p. 105)
- 2 to 6% of the population are the "Hard Core" Dyslexics that will not improve with "Good Instruction." They have the full dyslexic neurology and need "multi-sensory approaches."

Fletcher, J.M., Lyon, G.R., Fuchs, L.S. and Barnes, M.A. (2007). Learning Disabilities: From Identification to Intervention. New York, NY: Guilford, p. 105.

Lyon, G.R. (Thursday, February 27, 2003). Application of Scientific Research Methods to the Study of Naming Deficits: Systematic Interventions to Improve Fluency in Word Reading Skills and Comprehension. Paper Presented at the 40th Annual Learning Disabilities Association Conference, Chicago, IL, Session T-39.

Lyon, G.R. (March 19, 2004). A Summary of Current NICHD Research Findings in Math, Reading Development in English Speaking Children and Plans For Future Research. Seminar Presented at the 41st Annual Learning Disabilities Association of America International Conference, Atlanta, Georgia, March 17 to March 20, 2004.

Reasons why Prosopagnosia MAY be More Common in Some Groups Of Dyslexics

- Dyslexics have anomolies in visually processing Low Spatial Frequencies (LSF), or capturing information about the spatial configuration of features due to differences in their magnocellular visual system which is part of the Lateral Geniculate Nucleus (LGN). This system rapidly processes low contrast visual information.
- Facial processing requires the Low Spatial Frequency Processing of the Lateral Geniculate Nucleus.

Galaburda, A.M. and Duchaine, B.C. (2003). Developmental Disorders of Vision. Neurologic Clinics, 21 (3), 687-707.

Schultz, R.T. (2005). Developmental Deficits in Social Perception in Autism: The Role of the Amygdala and Fusiform Face Area. International Journal of Developmental Neuroscience, 23, 125-141.

Prosopagnosia and Dyslexia

- Although the Left Fusiform Gyrus Face Area may activate in some non-disabled people during face perception, the Right Fusiform Gyrus always has stronger and longer activations.
- "Phonological Decoding Involves Left Posterior Fusiform Gyrus."
- Dyslexics have processing anomolies in the left Fusiform Gyrus word-form area.
- M170 waves involved in reading and face processing.

Schultz, R.T. (2005). Developmental Deficits in Social Perception in Autism: The Role of the Amygdala and Fusiform Face Area. International Journal of Developmental Neuroscience, 23, 125-141.

Dietz, N.A.E., Jones, K.M., Gareau, L., Zeffiro, T.A. and Edan, G.F. (2005). Phonological Decoding Involves Left Posterior Fusiform Gyrus. Human Brain Mapping,26, pp. 81-93.

Shaywitz, S. and Shaywitz, B. (September, 2007). Neurobiology of Reading and Dyslexia. The ASHA Leader Online, 12 (12), pp. 20-12.

www.psych.nyu.edu/pylkkanen/LOT_2005/DAY1/Letter_perception.pdf

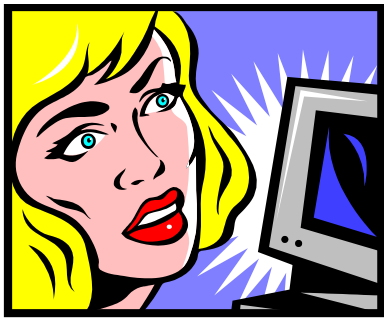
How to Assess Developmental Prosopagnosia

- Cambridge Face Memory Test
- Test My Face Recognition- Internet test

Duchaine, B. and Nakayama, K. (2006). The Cambridge Face Memory Test: Results for Neurologically Intact and an Investigation of It's Validity Using Inverted Face Stimuli and Prosopagnosic Participants. Neuropsychologia, 44, pp. 576-585. From web site:

www.faceblind.org/people/duchaine06neuropsychologia.pdf#search=%22Cambridge%20Face%20Memory%20Test%22 .

Test My Face Recognition (From web site): www.faceblind.org/index.php



Treatment of Prosopagnosia

- "Prosopagnosics cannot be cured, but they can and do learn ways to recognize people." (p. 70)

Grueter, T. (August/September, 2007). Forgetting Faces. Scientific American: Mind, 18 (4), 68-73.

Treatment of Prosopagnosia

"A treatment programme on training in perception, and analysis of facial features and familiar-face naming was conducted. Treatment resulted in excellent face naming for familiar faces, a decreased reliance on nonfacial cues and a reduction in AL's tendency to misidentify unfamiliar faces as family members." (p. 1 of 2)

Brunsdon, R., Coltheart, M. Nickels, L. and Jay, P. (September 2006). Developmental Prosopagnosia: A Case Analysis and Treatment Study. Cognitive Neuropsychology. 23 (6), 822-840 (From abstract).

Treatment of Prosopagnosia: "Are you my Mother?"

- Encourage the person to look at peoples faces when socializing.
- Introduce new people slowly and emphasize their characteristics: "Say hi to Billy with the red hair and freckles."
- Have children meet teachers long before school starts and have the child meet with them often.
- Have teachers keep their appearance "stable".
- Play introduction games.
- Post photos of teachers, friends, parents on wall.

Grueter, T. (August/September, 2007). Forgetting Faces. Scientific American Mind, 18 (4), 68-73.

Mnemonic Techniques to Remember Faces

- Lucas, J. (2000). Names and Faces Made Easy: The Fun Way To Remember People. Lucas.
- www.jerrylucas.com

Experimental Treatment for Prosopagnosia

- "Let's Face It" program developed by Jim Tanaka (University of Victoria) and researched by The Yale Child Study Program: Studies to Advance Autism Research and Treatment, Robert Schultz, et.al.
- "Find Wendy"
- http://info.med.yale.edu/chldstdy/neuroimg/face_perception.htm

Executive Memory Function Problems

- Working Memory:
  - "…denotes a person's information-processing capacity" (p. 4-5)
  - Is the "memory buffer in the brain"
  - It allows for "theory of mind"

Wechsler Adult Intelligence Scale- Third Edition, Wechsler Memory Scale-Third Edition (1997). Technical Manual. San Antonio, TX : Psychological Corporation.

Brown, T. E. (October 11, 2001). Assessment and Treatment of Complicated ADHD Across the Lifespan. Seminar Presented at the Arizona Association of School Psychologists 33rd Annual Conference, Mesa, AZ.

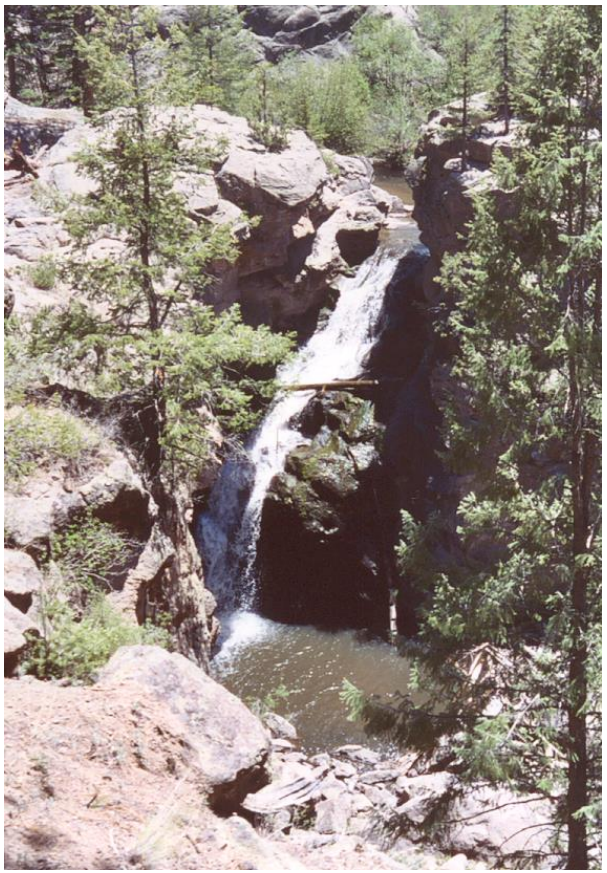
Frith, C. D. and Frith, U. (1999). Intersecting Minds-A Biological Basis. Science, 286, pp. 1692-1695.

Executive Functioning and Social Abilities

- Stage 1: Problems Encoding Social Information-EF level-Traditional Social Skills programs typically don't work because the child cannot connect behavior to the situation.
- Stage 2 and afterward: Problems generating responses-easier to remediate with Traditional Social Skills programs.

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

Working Memory and AD/HD



- “AD/HD kids are not ‘clueless’. They’re ‘cueless’.”

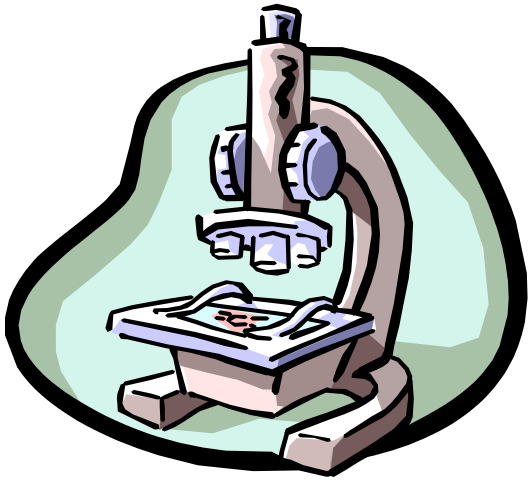
Goldstein, S. (November 20, 1998). Pathways to Success:Evening the Odds in the Treatment of Attention-Deficit Hyperactivity Disorder. Seminar presented in Tucson, AZ.

EF and AD/HD

- It appears the problems those with AD/HD have with academic achievement and social communication and behavior are related to EF difficulties.
- This does not appear to be the case in those with ODD and/or CD without AD/HD.

Clark, C., Prior, M. and Kinsella, G. (2002). The Relationship Between Executive Function Abilities, Adaptive Behavior, and Academic Achievement in Children with Externalizing Behavior Problems, Journal of Child Psychology and Psychiatry, 43, p. 785-796. From: (June, 2003). Executive Function and Communication Difficulties May Contribute to Adaptive Behavior Problems. ADHD Report, p. 12-13.

Summary of Barkley's Theory



Step 1: ***Response Delay***

Step 2: ***Prolongation***

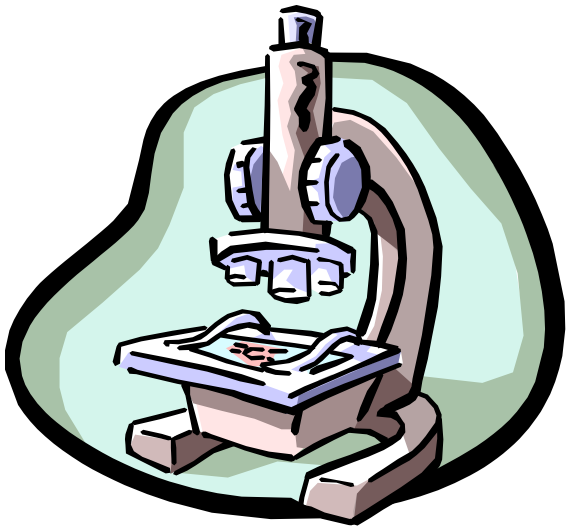
Step 3: ***Rule Governed Behavior***

Step 4: ***Dismemberment of the Environment***

Barkley, R.A. (1997). ADHD and the Nature of Self-Control. New York, NY: Guilford.

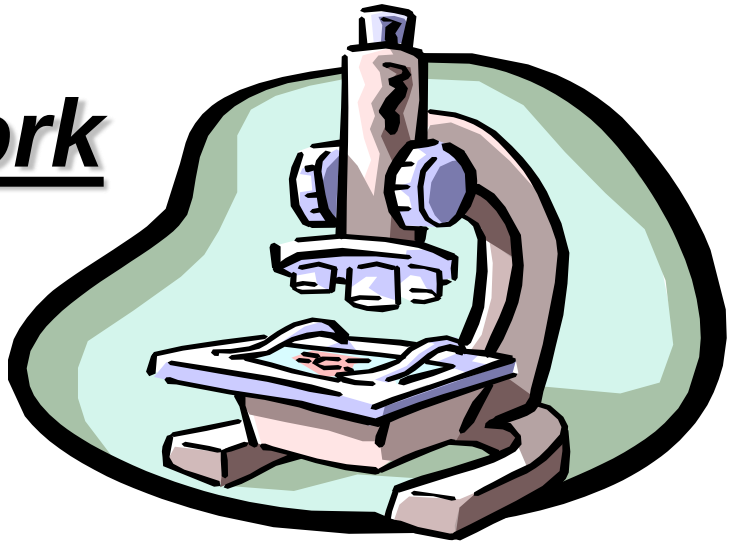
Brown's Theory Summarized

1. ***ACTIVATION***
2. ***FOCUS***
3. ***EFFORT***
4. ***EMOTION***
5. ***MEMORY***
6. ***ACTION***



Brown, T.E. (2002). <u>Social Ineptness & "Emotional Intelligence" in ADHD</u>. Paper Presented at the 14th Annual CHADD International Conference, Miami Beach, FL, October 17-19.

Your Tax Dollars at Work

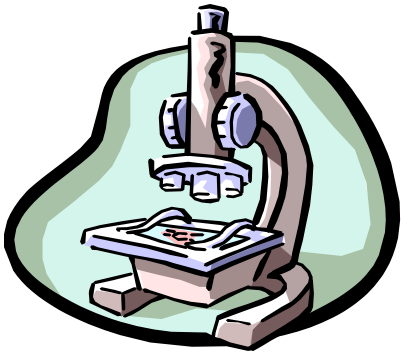


The Multimodal Treatment Study of Children with Attention Deficit Hyperactivity Disorder

(*MTA Study = Multimodal Treatment Assessment of AD/HD)*

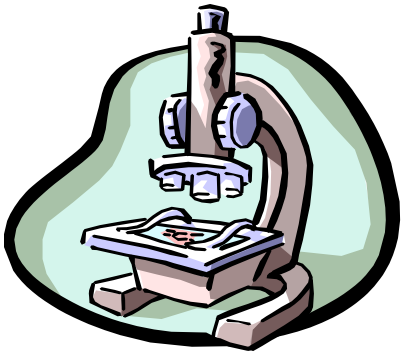
1999

The MTA Study



- Mid-1990s
- 579 AD/HD, Combined Type Children
- Demographics matched the 1990 US Census
- Randomly assigned to one of four groups
- After assigned to group each child was thoroughly reassessed to make sure they were AD/HD, CT

The MTA Study



- Group 1: “Experimental Medication”
  - Three medications used
    - Methyltphenidate (Ritalin)
    - D Amphetamine (Dexedrene)
    - Pemoline (Cylert)**
      - If medication one did not work or there was a side effect, changed to the next medication and so on.

  - Each month parent and child was seen by physician. Child checked for response to treatment and side effects. Each month questionnaires given to parents and teachers.

Warning: Stimulants & AD/HD

- "The FDA's review of sudden death or cardiovascular incidents in patients taking AD/HD medications found 25 reports of death between 1999 and 2005 and 54 reports of serious cardiovascular problems. Some of these patients had pre-existing heart conditions or hypertension, the report noted."

Goodman, B. (2/23/2006). FDA Warning on AD/HD Medications "Premature"; National AD/HD Advocacy Group Urges Further Research. From Website: www.chadd.org/whatsnew/FDAHearings.htm

Warning: Stimulants & AD/HD

- According to the Center for Disease Control (CDC) about 2,500,000 children between 4 and 17 take AD/HD medications.
- "According to the Surgeon General, medication is effective for about 80 percent of the people who have the disorder." (sic. AD/HD)

Goodman, B. (2/23/2006). FDA Warning on AD/HD Medications "Premature"; National AD/HD Advocacy Group Urges Further Research. From Website: www.chadd.org/whatsnew/FDAHearings.htm

Warning: Strattera and AD/HD

- PDR Warning about liver problems. Two people have had liver function problems who have been placed on this medication.

Surman, C. (May 12, 2005). AD/HD and Comorbidity. Paper presented at the National Attention Deficit Disorder Association Annual Conference, May 12-15, 2005, Tucson, AZ.

Warning: Cylert & AD/HD

- Cylert (Pemoline) has a low abuse potential,but may cause liver toxicity. Must check liver enzymes every two weeks.
- It now has a PDR Black Box Warning.

Prince, J., and Wilens, T. (2002). Medications Used in the Treatment of AD/HD in Women. In P.O. Quinn, and K.G. Nadeau (Eds.), Gender Issues and AD/HD. Silver Spring, MD: Advantage, pp. 144-182.

Hallowell, E.M., and Ratey, J.J. (2005). Delivered From Distraction. New York, NY: Ballantine, pp. 251.

POPULATIONS

- World's projected population as of 01/01/07:

  6,605,046,992 X 5 (Years)
- US Population as of 12/06/06:
  300,351,641 X 1 (Year)

From US Census Bureau World Population Clock Projections:
www.census.gov/main/www/popclockworld.html and
www.census.gov/ipc/popclockworld.html

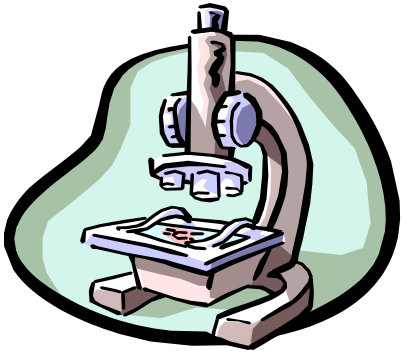
"My daughter died after taking aspirin."

- "Health experts have issued a warning that children under the age of 19 should not take aspirin because the risk of a rare but potentially fatal condition called Reye's Syndrome."
- Each year there are an estimated 7600 deaths and 76,000 hospitalizations from taking non-steroidal anti-inflammatory drugs (NSAID). What is a NSAID? Aspirin!

BBC News World Edition (10/23/2002). "My Daughter Died After Taking Aspirin". From website: www.newsbbc.uk/2/hi/health/2353187.stm

From website: www.drugwarfacts.org/causes.htm#nsaid

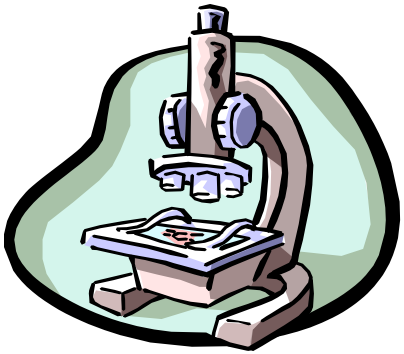
The MTA Study



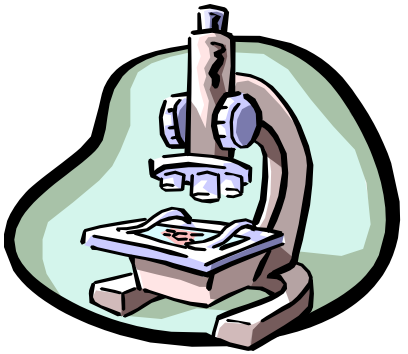
- Group 2: Behavior Modification
  - Each child received 1 hour per week individual counseling, 1 ½ hours group counseling, 2 hours per day, 5 days a week tutoring, parents taught how to use token economies at home and daily report cards, teachers taught how to teach AD/HD child, how to use token economies in the classroom, and daily report cards, parents and teachers given “800” number for consultation 24/7, continued on for 14 months!

The MTA Study

- Group 3: “Experimental Medication Plus Behavior Modification Group”



The MTA Study



- Group 4: “Community Services”
  - The parents are told their child has Combined Type AD/HD and they are encouraged to go out to their community and get what services they want for their child…This was the “Control Group.”
    - Medication, aroma therapy, etc.

MTA Study

- Medication Management Treatment Group did best. 50% decline in symptoms.
- Medication with Behavioral Modification Group did no better.
- Behavior Modification Group did better than placebo.
- Community Treatment only had 25% decline in symptoms.
- Medication helps with social interaction.

NIMH Research Treatment for Attention Deficit Hyperactivity Disorder (ADHD): The Multimodal Treatment Study – Questions and Answers. From website: www.nimh.nih.gov/chilfhp/mt.aqu.cfm

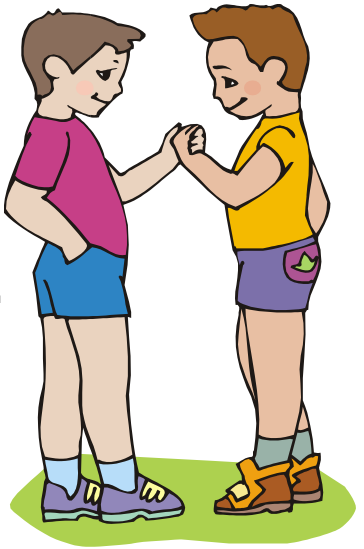
MTA Study

- “Based on these findings, we concluded that for AD/HD symptoms, a closely monitored medication approach of the MTA was superior to behavioral treatment alone and routine community treatment that included medication. Combined treatment offered slightly greater benefits than medication management alone for AD/HD symptom reduction as well as for other domains, such as peer relations, parent-child relations and academic outcomes.” (p. 64)
- Combined group used 20% less medication than Medication Only group.
- 24-month follow-up same basic results.

Jensen, P.S., Abikoff, H.B., Arnold, L.E., Epstein, J., Greehill, L.L., Hechtman, L., Hinshaw, S.P., March, J.S., Newcorn, J.H., Swanson, J.M., Vitello, B., Wells, K. and Wigal, T. (2006-2007). A 24-Month Follow-up to the NIMH MTA Study. The New CHADD Information and Resource Guide to AD/HD. Landover, MD: CHADD, pp. 64-67.

Medication and Social Interaction

- "The medications used to treat AD/HD often have positive social effects; in fact most children feel an improvement in the way they relate to others." (Aull, April, 2005, p. 36)



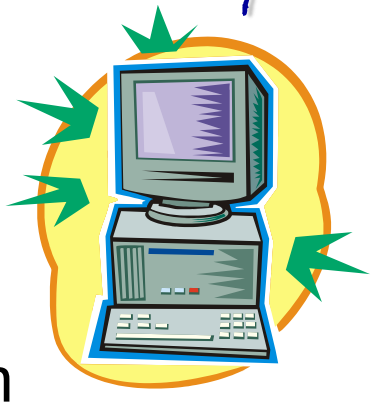
Aull, E.B. (April, 2005). Social Skills Improvement with AD/HD Medication. Attention!, 12 (2), pp. 34-37.

AD/HD and Medication

- “When the discussion is specifically reserved to symptom relief and impairment reduction for ADHD, this series of articles adds to an impressive body of scientific literature demonstrating that medication treatment, in the case of methylphenidate, is cost efficient and may be all that is needed for good responders.” (p. 3)

Goldstein, S. (December, 2004). Do Children with ADHD Benefit from Psychosocial Intervention, ADHD Report, 12 (6), 1-3.

Possible Alternative Medicine Treatment for Combined Type AD/HD



- Working Memory Training:
  - Torkel Klingberg, M.D., Ph.D.
  - Karolinska Institute- Stockholm, Sweden
  - CogMed software company
  - AD/HD deficient in visual spatial working memory. Gets worse with age.
  - ***MAY*** help relieve executive functioning difficulties in Combined Type AD/HD.
  - ***More Research is needed!***

Klingberg, T. (February, 2006). Training Working Memory. AD/HD Report, 14 (1), pp. 6-8.

Barkley, R. (February, 2006). Editorial Commentary Issues in Working Memory Training in ADHD. ADHD Report, 14 (1), pp. 9-11.

Ingersoll, B. (October 26, 2006). Complementary Treatments for AD/HD. Paper Presented at the 18th Annual CHADD International Conference, Chicago, IL.

Possible Alternative Medicine Treatment for Combined Type AD/HD

- Klingberg, T., Fernell, E., Olesen, P.J., Gustafsson, P., Dalstrom, K., Gillberg, C., Fossberg, H., Westerberg, H. (2005). Computerized Training of Working Memory In Children With ADHD – A Randomized, Controlled Trial. Journal of The American Academy of Child and Adolescent Psychiatry, 44 , 177-186.
- Gibson, B.S. Seroczynski, A., Gondoli, D.M. Braungart-Rieker, J. and Grundy, A.M. (In Press). Working Memory Training for Early Adolescents with Attention-Deficit Hyperactivity Disorders. Study conducted at the University of Notre Dame.

AD/HD and Social Skills Training

- Improved social skills in AD/HD children does not lead to better social acceptance. Why? Their poor reputation proceeds them.
- With AD/HD children start social skills training early.
- Include their peers in the treatment.
- Explain AD/HD to their peers.

Antshel, K.M. (February, 2005) Social Skills Training Reconsidered: What Role Should Peers Play? ADHD Report, 13 (1), pp. 1-5.

Treatments For Memory Disorders

- Mnemonics-memory tricks
- Diaries and Social Statements
- Technology-Watchminder watch, etc.-www.addwarehouse.com
- Nootropic Medications-Piracetam, etc.

Nosek, K. (1997). Dyslexia in Adults: Taking Charge of Your Life. Dallas, TX: Taylor.

Smith, L. and Godfrey, H.D.P. (1995). Family Support Programs Rehabilitation: A Cognitive-Behavioral Approach to Traumatic Brain Injury. New York, NY: Plenum.

Barkley, R.A. (1998). Attention Deficit Hyperactivity Disorder (Second Edition). New York, NY: Guilford.

Goldstein, S. and Goldstein, M. (1997). Drugs Affecting Learning, Attention, and Memory. In S. Goldstein (Ed.), Managing Attention and Learning in Late Adolescence & Adulthood: A Guide for Practitioners. New York, NY: John Wiley & Sons, pp. 327-373.

Good Resources for Mnemonic Techniques

- www.jerrylucas.com
- Doctor memory
- Lucas, J. and Lorrane, H. (1974). The Memory Book. New York, NY: Ballantine.

Technology for Memory Difficulties

- Watchminder 2
  - Vibrates to remind student of deadlines
  - It can remind them to check to see if they are “on task.”

Available from:
http://watchminder.com/

Technology for Memory Difficulties

- "Nag Recordings" made by father
- Record lectures with a digital recorder
- Available from:
  - Walmart
  - Best Buy
  - Staples, etc.

http://www.rcaaudiovideo.com/product.aspx?product=218

Technology for Memory Difficulties

- Digital Voice Recorder with Camera
- Available from:
  - www.rcaaudiovideo.com

www.2dayblog.com

Technology for Memory Difficulties

- Personal Digital Assistant (PDA)

  www.**palm**.com

- Time Management Organizer

  www.**FranklinCovey**.com

Technology for Memory Difficulities

- Rolodex Organizer:

  www.franklin.com

http://www.franklin.com/estore/dictionary/RT-8015/

Professionals Who Can Help with Memory

- AD/HD Coaches: www.addbrain.com
- Professional Organizers: www.napo.net
- Psychiatrists: www.apa@psych.org
- Psychologists: www.apa.org
- Masters Level Counselors: www.nbcc.org
- Social Workers: www.naswdc.org
- Behavioral Neurologists: www.anpaonline.org
- Speech-Language Pathologists: www.professional.asha.org
- Association for Persons in Supported Employment (APSE): www.apse@apse.org

Workplace Accommodations

Job Accommodations Network
P. O. Box 6080
Morgantown, WV 26506-6080
Voice/TTY (in US): 1-800-526-7234
Voice/TTY (Worldwide): 1-304-293-7186
Fax: 1-304-293-5407
E-mail: jan@jan.icdi.wvu.edu
Web: www.jan.wvu.edu/english/

Visual Spatial Processing Disorders

Learning Disorders Classified

- 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

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-bprourke.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 18th Annual CHADD International Conference, Chicago, IL.

Nonverbal Learning Disorder (NVLD)

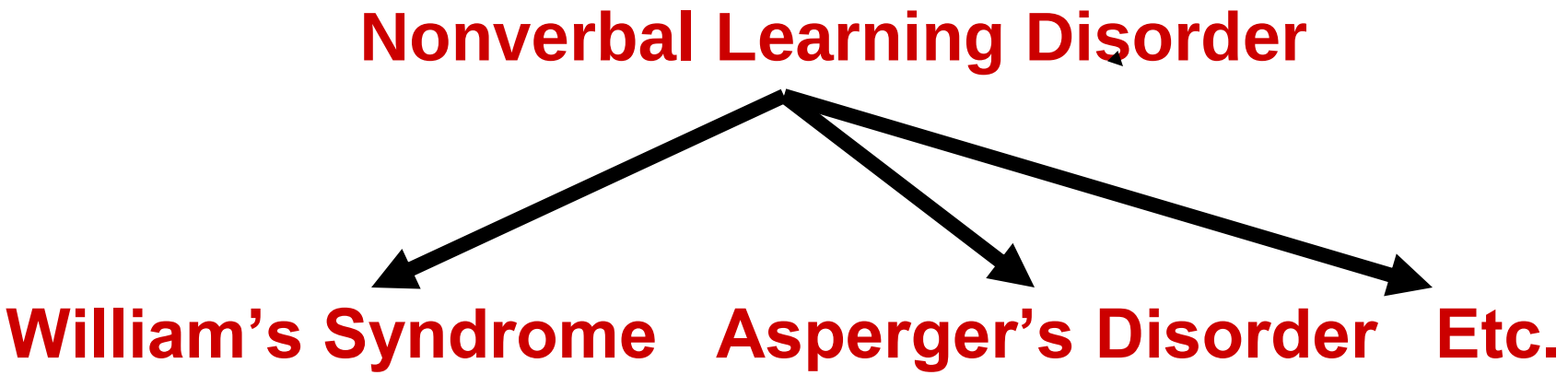
- Approximately 80% of those with Learning Disorders have Reading Disorder/Dyslexia. (Shaywitz, 2003)
- 1-2% of population have NVLD exclusively and about 30% have “Mixed” language LD and NVLD. (Berg and Stockdale, 2000)

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 51st Annual Conference, November 8-11, 2000, Washington, DC.

What's In A Name?

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



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.

Attwood's Continuum of the Autism Spectrum (Continued)

Level 1
Kanner's
Autism

Level 2

Level 3
Asperger's
Disorder

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.

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)

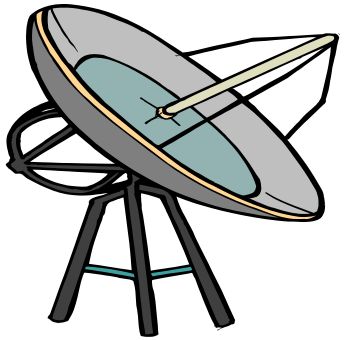
Stockdale, C. & Possin, C. (2001). Spatial Relations and Learning. Website: www.Newhorizons.org/spneeds_arkspatial.html , pp.1-24.

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 52nd International Dyslexia Association International Conference, Albuquerque, NM, October 24-27, 2001. Convention Recordings, Inc. – www.conventionrecordings.com; St. Petersberg, 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.

Visual-Spatial Working Memory and Combined Type AD/HD

- Those with Combined type AD/HD have a significant problem with Visual-Spatial Working Memory.
- The RM program may help in improving visual-spatial working memory.
- Medication may, too.

- Klingberg, T., Fernell, E., Olesen, P.J., Gustafsson, P., Dalstrom, K., Gillberg, C., Fossberg, H. Westerberg, H. (2005). Computerized Training of Working Memory In Children With ADHD – A Randomized, Controlled Trial. Journal of The American Academy of Child and Adolescent Psychiatry, 44 , 177-186.
- Gibson, B.S., Seroczynski, A., Gondoli, D.M., Braungart-Rieker, J. and Grundy, A.M. (In Press). Working Memory Training for Early Adolescents with Attention-Deficit Hyperactivity Disorders. Study conducted at the University of Notre Dame.

Strabismus and Combined Type AD/HD

- Convergent Insuffiency = Lack of coordination between the eye muscles
- 2% to 8% of the population has strabismus.
- Rate 3 times higher in those with AD/HD Combined Type
- Symptoms: Trouble with near work, headaches, "swimming words"
- Treatment: At home eye exercises
- Neuro-Ophthalmologists (M.D./D.O.): www.anpaonline.org
- Behavioral Optometrists? www.optometrist.org
- ***NOTE: This does NOT cure AD/HD!***

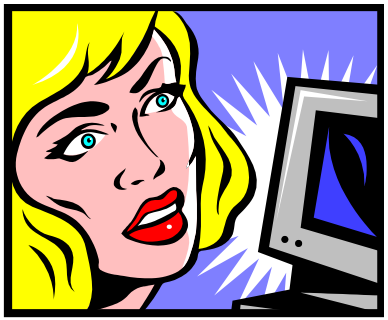
Ingersoll, B. (October 26, 2006). Complementary Treatments for AD/HD. Paper Presented at the 18th Annual CHADD International Conference, Chicago, IL.

Granet, D. (2005) Strabismus.

David Granet – National Eye Institute of National Institutes of Health

Prosopagnosia of Facial Expressions

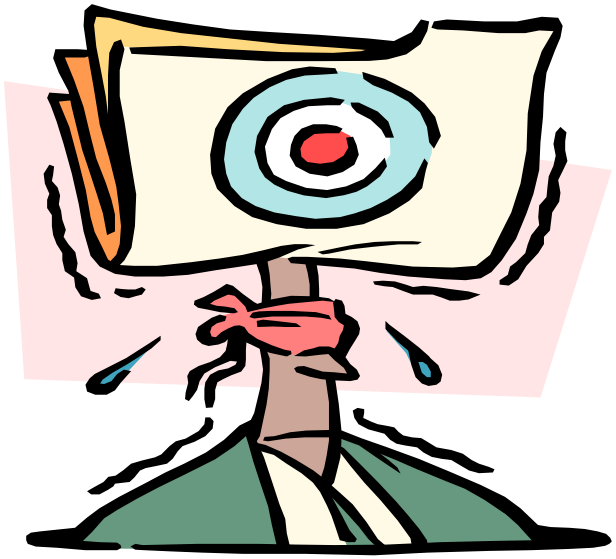
Prosopagnosia of Facial Expressions



"Face perception can be subdivided into two general types – recognition of person identity via the structures of the face, and recognition of internal affective state of the shape of individual features and changes in their relative distance from one another during the expression." (p. 128)

Schultz, R.T. (2005). Developmental Deficits in Social Perception in Autism: The Role of the Amygdala and Fusiform Face Area. International Journal of Developmental Neuroscience, 23, 125-141.

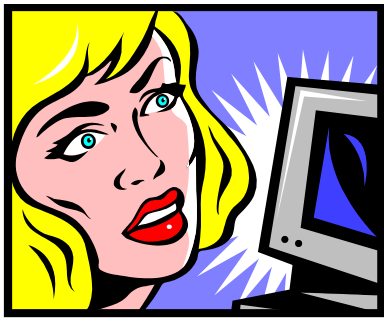
Recognizing Emotional Facial Expressions



- Emotional Facial Expression Recognition:
  - "Does this mean we come into the world expecting to see human faces and ready to respond with our own prewired facial expressions? Yes!" (Ratey, 2001, p. 300)

Ratey, J. J. (2001). A User's Guide to the Brain: Perception, Attention, and the Four Theaters of the Brain. New York: NY: Vintage.

Facial Expressions

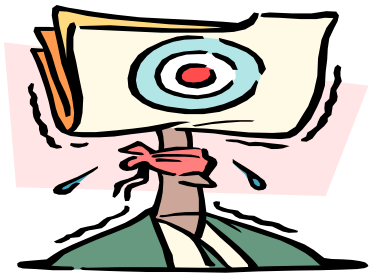


- Remembering Expressions:
  - The non-disabled are “pre-wired” to find the human face and voice the most important stimuli in the world.
  - Those with Autism cannot generalize what they learn (imitation/mimic). They copy behavior.
  - Those with Asperger’s Disorder (AD) don’t look at the eyes they look at the mouth. Differentiated those with AD from non-disabled 100% of the time.

Klin, A. (October 11-12, 2001). Autism, Asperger’s and the PDD Spectrum. Seminar presented at the 33rd Annual Arizona Association of School Psychologists Conference, Mesa, AZ.

Volkmar, F.(April 23, 2003). Asperger Syndrome: Clinical Features, Assessment, and Intervention Guidelines. Seminar presented by New England Educational Institute, Phoenix, AZ

Genetics and Facial Expressions



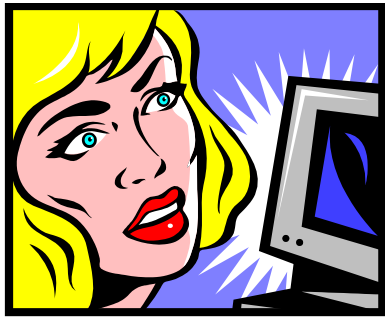
- People born blind and who have never seen facial expressions make them accurately.
- They follow unique genetic family facial expression signatures.

Peleg, G., Katzir , G. ,Peleg,O., Kamara, M. , Brodsky, L., Hel-Or, H. , Keren, D. and Nevo, E. (October 26, 2006). Hereditary family signature of facial expression**.** Proceedings of the National Academy of Sciences of the United States of America, 103 (43), PP. 15921-15926.

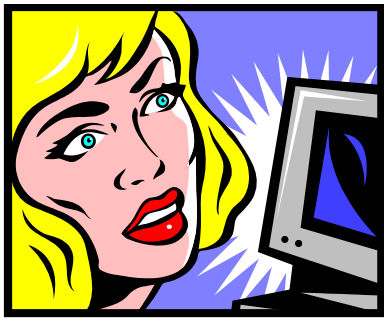
Borderline Personality Disorder and Facial Expressions

- Those with BPD may be better at reading facial expressions than the general population.
- This may be part of their problem with unstable relationships.

Dingfelder, S. (December, 2006). BPD Tied to Enhanced Emotion Recognition. Monitor On Psychology, 37 (11), p. 12; Lynch, T.R. (November, 2006). Emotion, 6 (4).



Prosopagnosia and Autism Spectrum Disorders

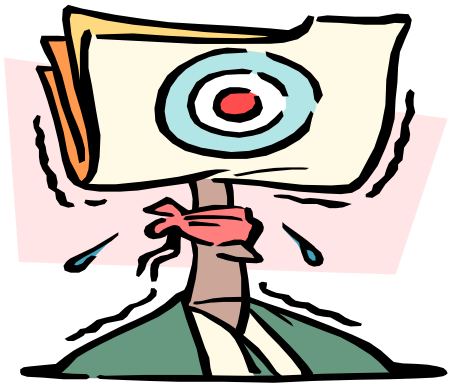


"Thus, these data argue for the role of the FFA-amygdala system in social cognition more generally, and retrieval of specific social knowledge about what constitutes a friendly social interaction, or not. Collectively these data suggest the amygdala-FFA system and its failure to strongly activate during face perception tasks points to a causal mechanism involved in autism…" (p. 137)

Schultz, R.T. (2005). Developmental Deficits in Social Perception in Autism: The Role of the Amygdala and Fusiform Face Area. International Journal of Developmental Neuroscience, 23, 125-141.

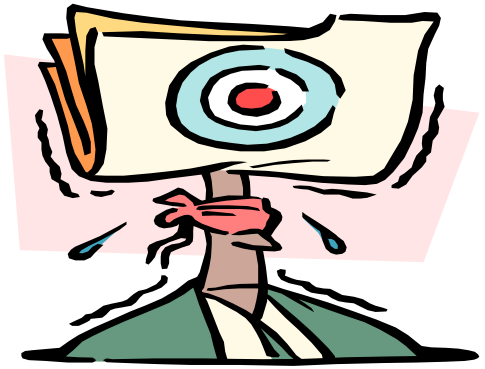
Decoding Skill and Facial Expression

- Positive emotions are the easiest to decode.
- Negative emotions are the most difficult.
- Poor interpreters of facial expression have less social acceptance and poorer adjustment.



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

Decoding Skill and Facial Expression



- Most and Greenbank (2000) stated LD children are less accurate in identifying emotional expressions than non-LD children.
- Brown (2001) indicated AD/HD children are less accurate in facial expression identification than their non-AD/HD peers.
- Attwood (2007) stated those with Asperger's Disorder have great difficulty decoding faces.

Most, T. and Greenbank, A. (2000). Auditory, Visual, and Auditory—Visual Perception of Emotions by Adolescents With and Without Learning Disabilities, and their Relationship to Social Skills. Journal of Learning Disabilities, 15 (4), pp. 171-178.

Brown, T. E. (2001). Social Ineptness & "Emotional Intelligence" in ADHD. Paper Presented at the 13th Annual Children and Adults With Attention Deficit Disorders International Conference, October 18-20 2001, Anaheim CA.

Attwood, T. (2007). The Complete Guide to Asperger's Syndrome. Philadelphia, PA: Jessica Kingsley, p. 130.

Problems Making the Appropriate Facial Expression to Match How One Feels and What is Appropriate to The Situation

- Unmedicated AD/HD, Combined Type people have difficulty making facial expressions to match how they feel. They tend to "over-emote" their facial expressions. (Kuehle, et.al., 2002).
- Attwood's (2007) story of the boy with Asperger's Disorder who saw his mother crying and asked, "What face do I make?" (p. 134)

Kuehle, H.J., Hoch, C. and Jansen, F. (2002). Video Assisted Observation of Visual Attention, Facial Expression of the Individual Stimulant Dosage and Motor Behavior for the Diagnosis and for the Determination in Children with AD/HD. Obtained from: Kuehle, H. (October 17, 2002). Video Assisted Observation of Visual Attention and Motor Behavior for the Diagnosis and Determination of the Individual Stimulant Dosage in Children with AD/HD. Research Poster Session, 14th Annual CHADD International Conference, Miami Beach, FL.

Attwood, T. (2007). The Complete Guide to Asperger's Syndrome. Philadelphia, PA: Jessica Kingsley, p. 135.

Assessment for Face Perception

- ***Reading The Mind In The Eyes Test***: **Screening test for problems interpreting facial expressions.**

Baron-Cohen, S. (2003). The Essential Difference. New York, NY: Basic Books, pp. 197-199.

- **Research versions of the "Eyes Test"**
  - ***Adult Eyes Test (Instructions, Part 1 and Part 2***
  - ***Child Eyes Test (Instructions, Part 1 and Part 2***
  - ***Faces Test***

Downloadable from: www.human-emotions.com/mindreading/default.asp

FACE READING ASSESSMENT

- **Comprehensive Affect Testing System (CATS)**

  "This ensemble of tests enables clinical psychologists, neuropsychologists, neurologists, educators, speech therapists and other related disciplines to assess dysfunctional processing of affect expressed by the human face and voice." (p. 1 of 4)

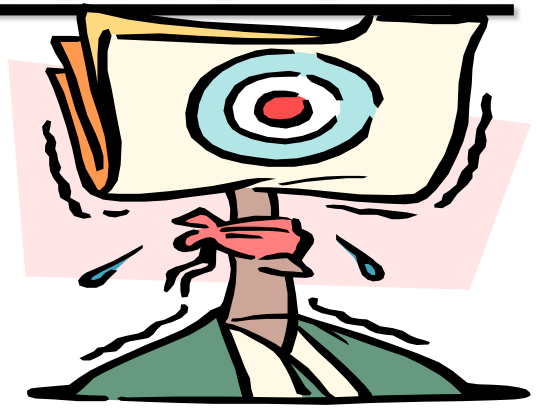
  Froming, K., Levy, M. and Ekman, P. (2003).

  www.psychologysoftware.com/testing_instruments.htm

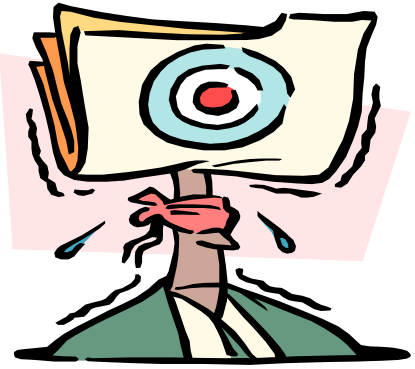
Treating Problems Reading Facial Expressions

- **Volkmar, F. (April 23, 2003). Asperger Syndrome: Clinical Features, Assessment, and Intervention Guidelines. Seminar presented by the New England Educational Institute, Phoenix, AZ.**
- **Gauthier, I. and Tarr, M.J. (1997). Becoming a "Greeble" Expert: Exploring Mechanisms for Face Recognition. Vision Research, 37 (12), 1673-1682.**

- ***FACIAL EXPRESSIONS CAN BE TAUGHT!***



Treating Problems Making & Reading Facial Expressions



- "Gaining Face" computer program (www.ccoder.com/GainingFace/)
- Ekman CD-ROMs (www.paulekman.com)
- Baron-Cohen: "Mind Reading – An Interactive Guide to Human Emotions (CD-ROM); www.human-emotions.com/mindreading/default.asp
- Cognitive Affective Training-Faces and Feeling Words: www.CAT-kit.com
- Student Handout: Emotions and Facial Expressions – From: McAfee, J. (2002). Navigating the Social World. Arlington, TX: Future Horizons, pp 83-84.

Experimental Program to Treat Difficulties in Recognizing Facial Expressions

- "Let's Face It" program developed by Jim Tanaka (University of Victoria) and researched by The Yale Child Study Program: Studies to Advance Autism Research and Treatment, Robert Schultz, et.al.
- Picture of face with facial expression…Find the word that describes the facial expression.
- http://info.med.yale.edu/chldstdy/neuroimg/face_perception.htm

Evolution and Facial Expression

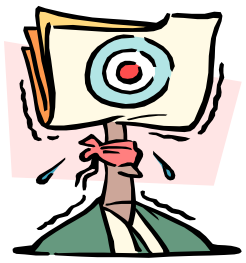
- Chimpanzee facial expressions require more attention to detail than originally thought.

Parr, L.A. and Waller, B.M. (2006). Understanding Chimpanzee Facial Expression: Insights into The Evolution of Communication. Social and Cognitive Affective Neuroscience, 1 (3), 221-228 (from Abstract)

Treating Problems Reading and Making Facial Expressions

Micro Expression Training Tool (METT) CD

– Available from: www.emotionsrevealed.com



- "In under an hour you will learn how to recognize very brief expressions (1/5 of a second)." The METT trains one to recognize the 7 universal emotions: enjoyment, fear, surprise, sadness, contempt, anger and disgust.

Subtle Expression Training Tool (SETT)

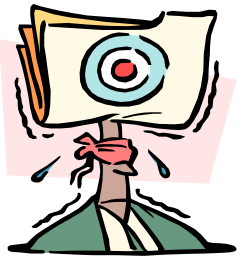
– Available from: www.emotionsrevealed.com

Treating Problems Reading and Making Facial Expressions

- Ekman, P. & Friesen, W.V. (2003). Unmasking The Face: A Guide To Recognizing Emotions From Facial Cues. Cambridge, MA: Malor Books.
- Ekman, P. (2003). Emotions Revealed: Recognizing Faces and Feelings to Improve Communication and Emotional Life. New York, NY: Time Books.

  Appendix: Face Reading-The Test
- Available from: www.paulekman.com

Facial Expression Training & Autism



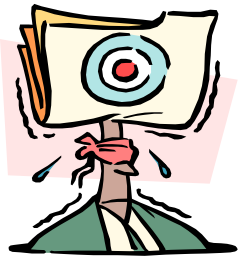
- "Even when people with autism spectrum disorders can figure out what someone's eyes or face conveys, they do so in a different way than everyone else, which may be less efficient or take more time." (p. 62)
- The non-disabled use the temporal lobe and fusiform gyrus to decode facial expressions.

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

Facial Expression Training & Autism

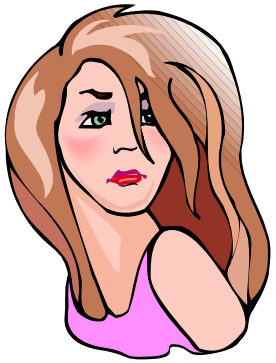
- Looking at pictures of eyes and deciphering the emotion they conveyed activated the non-disabled amygdalas and frontal lobes.
- Those with Asperger's used the frontal lobes far less and did not activate the amygdala. They used other areas of the brain not designed for such tasks.
- Those with Asperger's may use voice, touch, etc. to recognize others, not their face.

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



ASD and Facial Expression Recognition

- Social Skills training by Mental Health Professionals and Speech-Language Pathologists
- 9/11 & Future Prosthetic Devices (Azar, 2000)
- Try an “Emotional Seeing Eye Dog” (Grandin, 1995)



Azar, B. (2000). Two Computer Programs Face Off. Monitor on Psychology, 31 (1), pp. 48-49.

Grandin, T. (1995). Thinking in Pictures: And Other Reports From My Life with Autism. New York, NY: Vintage.

Grandin, T. (2006). Animals in Translation. New York, NY: Simon and Schuster.

ASD Wearable Prosthetic

"We describe a novel wearable device that perceives and reports on social-emotional information in real-time human interaction. Using a wearable camera, combined with machine perception algorithms, the system records and analyzes the facial expressions and head movements of the person with whom the wearer is interacting. We propose the application of the social-emotional prosthetic to assist the growing number of individuals diagnosed with Autism…"

ASD Wearable Prosthetic

"…Spectrum Disorder (ASD) in perceiving communication in a natural rather than a structured environment, bootstrapping their ability to learn and develop in social settings…" (p. 1)

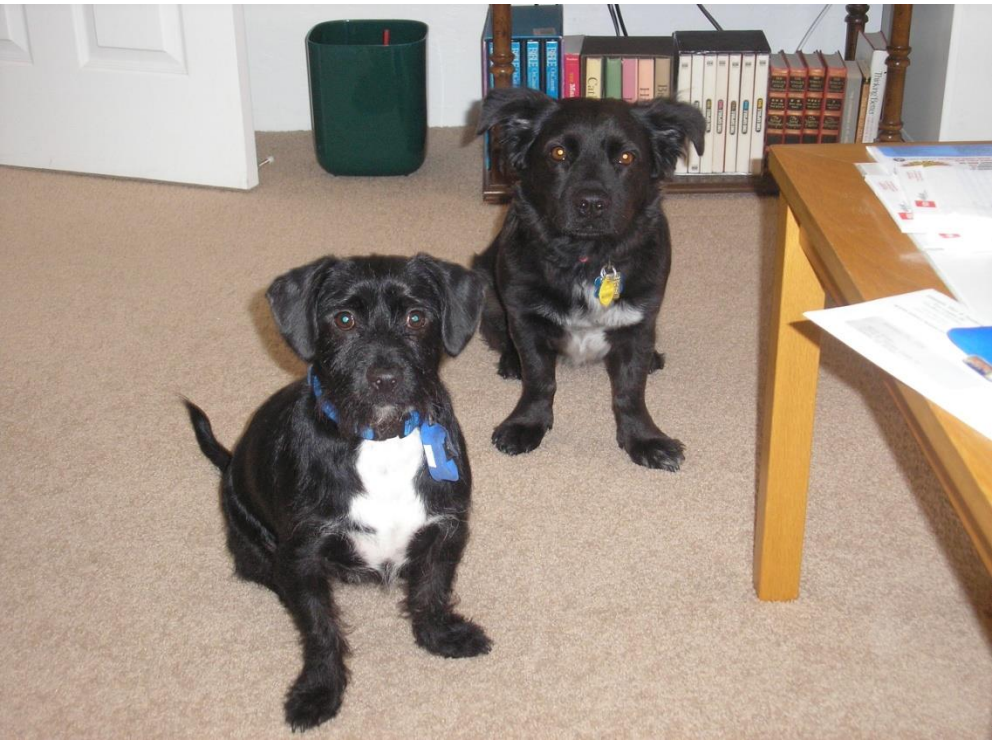
el Kaliouby, R., Teeters, A. and Picard, R.W. (MIT Media Lab) (No Date). An Exploratory Social-Emotional Prosthetic for Autism Spectrum Disorders. From website: www.affect.media.mit.edu/pdfs/06.kalioby-teeters-picard-bsn.pdf . More information from: kaliouby,alea,picard@media.mit.edu

Emotional Seeing Eye Dogs

- Dogs separated from wolves about 135,000 years ago.
- Dogs lived with humans 100,000; even before we were “modern humans” (Homo Habilis).
- Dog and humans co-evolved.
- Humans learned to think and act like dogs.
- Dogs allowed humans to hunt big game while they acted as guards and lookouts. Humans did more planning and organization activities.
- 14,000 years ago humans domesticated dogs.
- Homo Sapien Neantathalensis did not have dogs; they are extinct.
- In the past 100,000 years dogs brains shrunk by 10 to 30%; mostly in their forebrains. Humans’ brains shrank by 10%; mostly in the midbrain, sensory and smell areas.
- Dogs have a symbiotic relationship with humans and have a genetic predisposition to understand human emotions.

Grandin, T. (2005). Animals in Translation. New York, NY: Simon & Schuster.

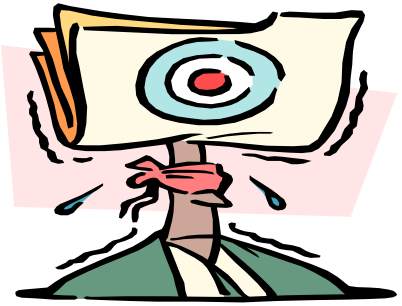
Emotional Seeing Eye Dogs



- 4Paws For Ability
  253 Dayton Avenue
  Xenia, OH 45385
- Training Center:
  937-374-0385
- E-mail:
  karen4paws@aol.com

AD/HD and Making Facial Expressions

Facial Expression and Social Ability



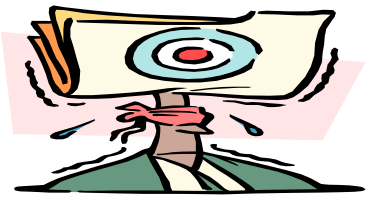
- Regarding facial expressions in children and adults with AD/HD Kuhle, Hoch, Rautzenberg and Jansen (2001) concluded, “Altogether, … the facial expressions, are uncontrolled and jerky and are often wrongly dimensioned in time and space.” (p. 6)

Kuhle, H.J., Hoch, C., Rautzenberg, P. and Jansen, F. (2001). Short-Term Video-Based Observation of Behavior with Special Reference to Eye-Contact, Facial Expression and Motor Activity in Diagnosis and Therapy of Attention Deficiency/ Hyperactivity Syndrome (ADHS). (First Published in): Praxis der Kinderpsychologie und Kinderpsychiatrie 50: 607-621. Obtained from: Kuehle, H. (October 17, 2002). Video Assisted Observation of Visual Attention and Motor Behavior for the Diagnosis and Determination of the Individual Stimulant Dosage in Children with AD/HD. Research Poster Session, 14th Annual CHADD International Conference, Miami Beach, FL.

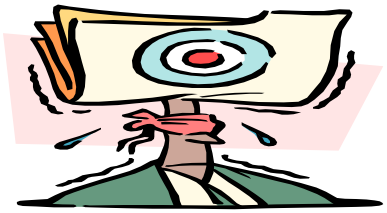
Facial Expressions and AD/HD

- AD/HD childrens' eyes drift away from those they are in conversation with.
- This usually interrupts the flow and their comprehension of the conversation.
- Often parents feel rejected by AD/HD children when they do this.

Kuehle, H.J., Hoch, C and Jansen, F. (2002). Video Assisted Observation of Visual Attention, Facial Expression of the Individual Stimulant Dosage and Motor Behavior for the Diagnosis and for the Determination in Children with AD/HD. Obtained from: Kuehle, H. (October 17, 2002). Video Assissted Observation of Visual Attention and Motor Behavior for the Diagnosis and Determination of the Individual Stimulant Dosage in Children with AD/HD. Research Poster Session, 14th Annual CHADD International Conference, Miami Beach, FL.



Facial Expressions and AD/HD



- AD/HD children smile abruptly.
- There is little or no transition between emotional states.
- Sometimes their facial expression bleeds over into the next emotional state.
- Expression of emotion often appears exaggerated. The quality of expression can be limited due to this.
- Even body movements are jerky and uncontrolled.

Kuehle, H.J., Hoch, C. and Jansen, F. (2002). Video Assisted Observation of Visual Attention, Facial Expression of the Individual Stimulant Dosage and Motor Behavior for the Diagnosis and for the Determination in Children with AD/HD. Obtained from: Kuehle, H. (October 17, 2002). Video Assisted Observation of Visual Attention and Motor Behavior for the Diagnosis and Determination of the Individual Stimulant Dosage in Children with AD/HD. Research Poster Session, 14th Annual CHADD International Conference, Miami Beach, FL.

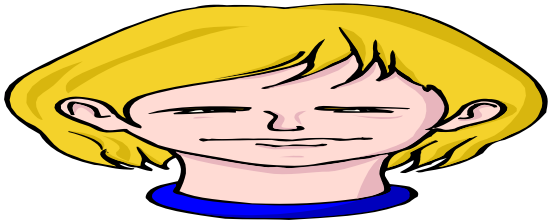
Possible Treatment of Problems with Facial Expression and AD/HD

- Optimal dosing of a stimulant medication causes a significant reduction in visual attention loss.

- Facial expressions will become smooth and variable.
- Too high a dose can cause a return of the symptoms.
- Can properly ID 80% of the AD/HD children with video procedure.

Kuhle, H.J., Hoch, C., Rautzenberg, P. and Jansen, F. (2001). Short-Term Video-Based Observation of Behavior with Special Reference to Eye-Contact, Facial Expression and Motor Activity in Diagnosis and Therapy of Attention Deficiency/ Hyperactivity Syndrome (ADHS). (First Published in): Praxis der Kinderpsychologie und Kinderpsychiatrie 50: 607-621. Obtained from: Kuehle, H. (October 17, 2002). Video Assisted Observation of Visual Attention and Motor Behavior for the Diagnosis and Determination of the Individual Stimulant Dosage in Children with AD/HD. Research Poster Session, 14th Annual CHADD International Conference, Miami Beach, FL.

The “Resting Face”



- 75% of the population has an emotionally neutral face.
- 25% of the population have a resting face that is interpreted negatively.
- The older you are the more at risk you are for this.
- This can cause a very negative first impression.
- Some people resort to surgery to ”correct” this (Bell’s Palsy, etc.).

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

"Perfect Beauty"

"A perfect smile: the front two teeth form a golden rectangle (which is said to be one of the most visually satisfying of forms, as it is formed with sides of 1 and 1.618). There is also a *Golden Ratio* in the height to width of the center two teeth. And the ratio of the width of the two center teeth to those next to them is phi. And, the ratio of the width of the smile to the third tooth from the center is also phi."

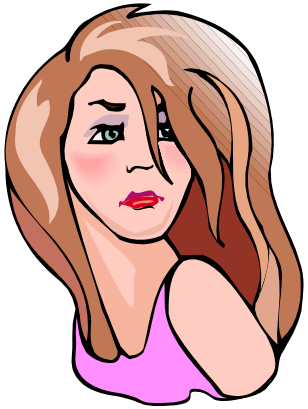
Author (No Date). The Beauty Of the Golden Ratio: The Golden Ratio and Beauty in Humans – The Human Face. From Website: http://library.thinkquest.org/trio/TTQ05063/phibeauty1.htm.

Facial Symmetry and "Beauty"

"The findings therefore support the claim that sexual dimorphism and symmetry in faces are signals advertising quality by providing evidence that there must be a biological mechanism linking the two traits during development. For example, individuals resistant to disease may be able to grow both symmetric and sexually dimorphic. Such work also suggests that faces may advertise quality across different human populations and even across different primate species."

Public Library of Science (2008, May 8). Why Face Symmetry Is Sexy Across Cultures And Species. *ScienceDaily*. Retrieved July 17, 2008. From Website: http://www.sciencedaily.com/releases/2008/05/080507083952.htm.

Flirting and Social Abilities



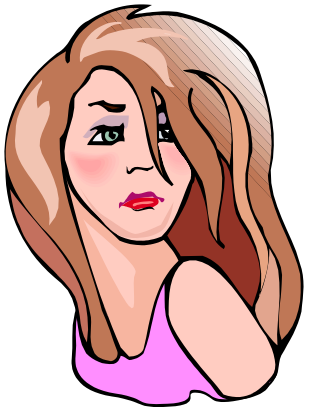
- "...a flirting plan is wired into us, and that it has been embedded in our genes and in our brain's operating system the same way and for the same reasons that every other sexual trait has been - by trial and error, with conservation of what works best." (Rodgers, 1999, p. 38)

Rodgers, J.E. (February, 1999). Fascinating Flirting. Psychology Today, 32 (1), 36-41, 64-65, 67, 69-70

Flirting and Social Abilities

- “Enter creativity, humor and intelligence. Deployed in flirting they disclose more about an individual person than all the antlers do about leaching animals…They act as an honest signal that we’ve got a reasonably well put together nervous system.” (p. 70)

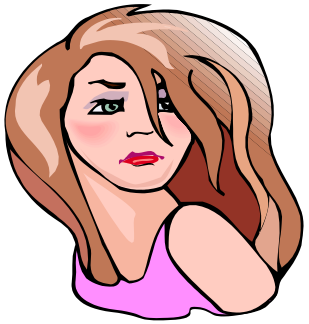
Rodgers, J.E. (February, 1999). Fascinating Flirting. Psychology Today, 32 (1), 36-41, 64-65, 67, 69-70.



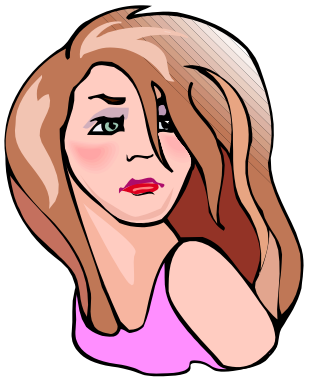
Flirting and Social Abilities

- "The moment of attraction, in fact, mimics a kind of brain damage…In attraction, we don't stop and think, we react, operating on a 'gut' feeling, with butterflies, giddiness, sweaty palms and and flushed faces brought on by the reactivity of the emotional brain. We suspend intellect at least as long enough to propel us to the next step in the mating game-flirtation." (p.5)

Ellison-Rogers, J. (January/February, 1999). Flirtation Fascination. Psychology Today, (Document ID: 575), From website: www.psychologytoday.com/articles/index.php?term+pto19990101-000033&print=1 .



Flirting and Social Abilities



- It takes about seven seconds to form a first opinion about another person. Most of this is done non-verbally.

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

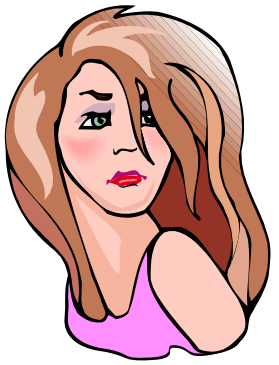
- Flo: the “ultimate flirt”

Van Lawick-Goodall, J. (1971). In the Shadow of Man. New York, NY: Delta.

- Mating and relationships would be almost impossible without facial expressions.

Gladwell, M. (August 5, 2002). The Naked Face (Interview of Paul Ekman). The New Yorker, pp. 36-49.

Flirting and Social Abilities



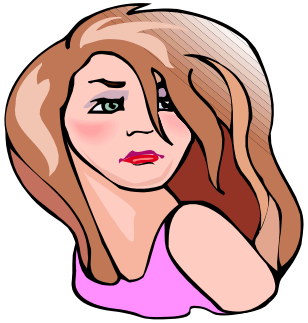
- Attwood's (1998) story of the man with Asperger's Disorder in a singles bar.
- Cordoni stated you need the same behaviors to get a job as you need to get a date.

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

Cordoni, B. (1987). Living With A Learning Disability. Carbondale, IL: Southern Illinois University Press.

Flirting and Social Abilities

"Over the course of our evolution as a species, our brains have learned how to spot the healthiest mates, those who are likely to give us children, and those whose resources and commitment can help our offspring survive." (p. 60)



Brizendine, L. (2006). The Female Brain. New York, NY: Morgan Road.

Chips and Polio

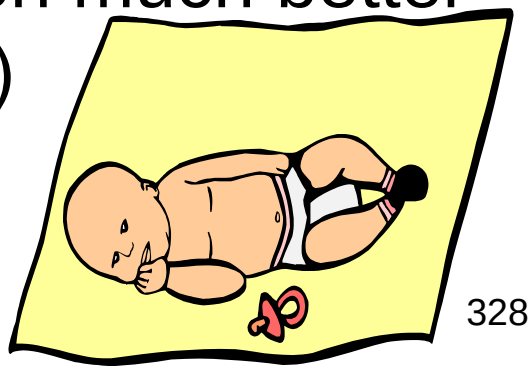
"Finally, there are the rarely observed instances of shunning a group member whose behavior seems abnormal – the social rejection of Pepe and Old Mr. McGregor after they suffered polio." (P. 227)

Goodall, J. (1986). Social Rejection Exclusion and Shunning Among Gombe Chimpanzees. Ethnology and Sociobiology, 7, pp. 227-239. From Website: http://www.bepress.com/context/gruterclassics/article/1032/viewcontent/.

But, What About Culture?

- "When Pat went to Japan to test adults on the American ***r*** and ***l*** sounds, she also tested babies. Japanese and American seven-month-olds discriminated ***r*** from ***l*** equally well. But just three months later, the two groups were as different as night from day. At ten months, Japanese infants could no longer hear the change from ***r*** to ***l***. American infants not only could do so but had actually gotten much better at making this distinction." (p.107)

Gopnik, A., Meltzoff, A.N. and Kuhl, P.K. (1999).
The Scientist In The Crib. New York, NY: HarperCollins, p. 107

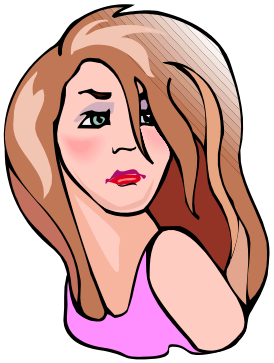


But, What About Culture?

- “Like imitation, baby flirtation suggests that babies not only know people when they see them but also that they are connected to people in a special way. Like grown-up flirtation, baby flirtation bypasses language and establishes a more direct link between people (p. 31).

Gopnik, A., Meltzoff, A.N., and Kuhl, P.K. (1999). The Scientist In The Crib. New York, NY: HarperCollins, p. 31

How to Treat Flirting Difficulties



- Social Skills training by Mental Health Professionals and Speech-Language Pathologists
- Treat Neurosocial Comorbidities
- 9/11 & Future Prosthetic Devices (Azar, 2000)
- Try an “Emotional Seeing Eye Dog” (Grandin, 1995)

Azar, B. (2000). Two Computer Programs Face Off. Monitor on Psychology, 31 (1), pp. 48-49.

Grandin, T. (1995). Thinking in Pictures: And Other Reports From My Life with Autism. New York, NY: Vintage.

Grandin, T. (2006). Animals in Translation. New York, NY: Simon and Schuster.

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: LinguiSystems.

ARK Foundation's Learning Window

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

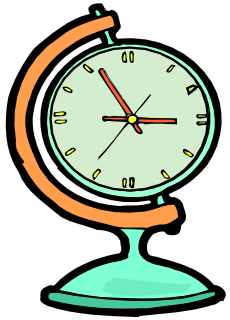
ARK Institute of Learning:

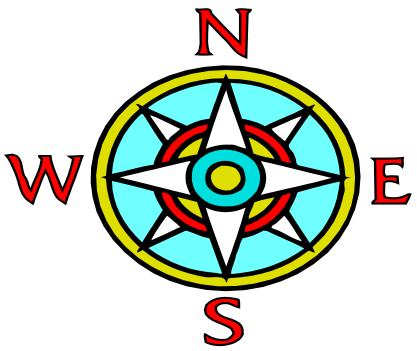
www.arkinst.org

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."

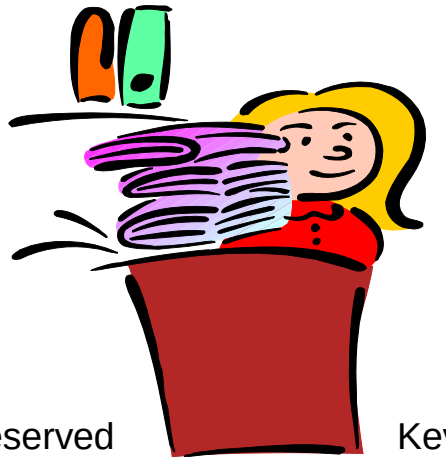
Berg, M. & Stockdale, C. (2001). The Language of Space and Time. Paper presented at the 52nd International Dyslexia Association International Conference, Albuquerque, NM, October 24-27, 2001. Convention Recordings, Inc. – www.conventionrecordings.com; St. Petersberg, FL, Session S-168.





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.ogr/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.ogr/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.ogr/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.ogr/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.ogr/thompson-5.htm

How to Help the NVLD Child in the Classroom

- Asks to 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.ogr/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 the 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.ogr/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.ogr/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.ogr/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.ogr/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

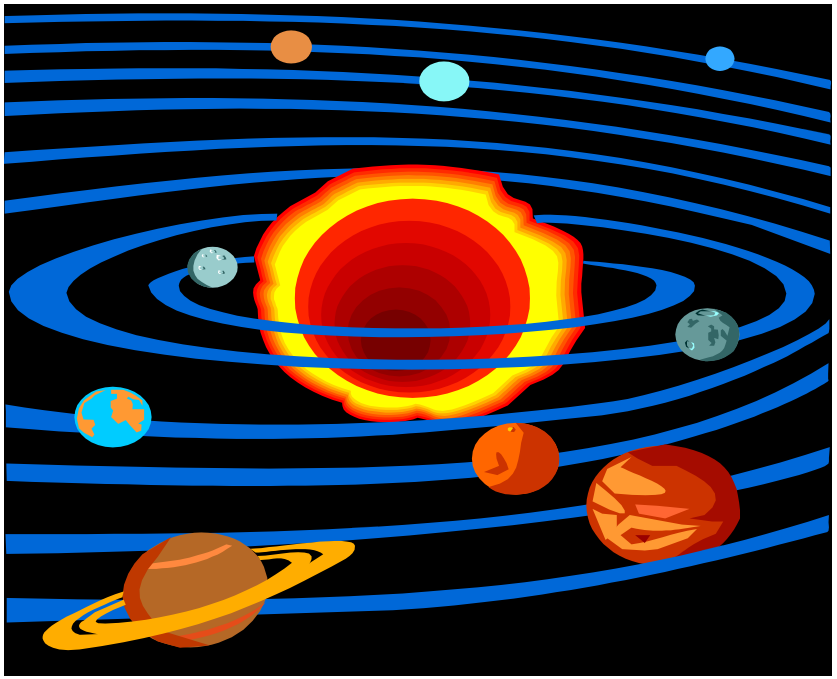
- Make abstract concrete
- Help with transitions
- Motivate
- Generalize:
  - Mass Practice to Learn Vs Distributed Practice - Generalization and Maintaince over time

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



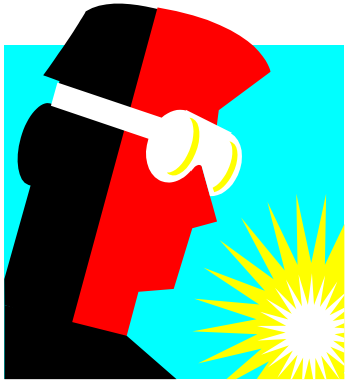
Nowicki, S. and Duke, M. (2002). <u>Will I Ever Fit In?</u> New York, NY: Free Press.

People Who Can Help with NVLD/Asperger's Disorder

- American Speech-Language Hearing Association: www.professional.asha.org
- Behavioral

  Neurologist/Neuropsychiatrists and/or Neuro-Ophthalmologist: www.anpaonline.org and

  www.ama-assn.org
- Mental Health Professionals
- American Occupational Therapy Association: www.atoa.org



Helpful Websites NVLD and Asperger's Disorder

- www.nldontheweb.org
- Nonverbal Learning Disability Association: www.**nlda**.org
- LD Online: www.**ldonline**.org
- MAAP Services for Autism and Asperger's Disorder: www.maapservices.org
- UC Davis M.I.N.D. Institute: www.ucdmc.ucdavis.edu/MINDInstitute
- Yale Child Study Center: 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: LinguiSystems.

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: LinguiSystems.

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.

Central Auditory Processing Disorder (CAPD)

Central Auditory Processing Disorder

- "The inability to understand spoken language in a meaningful way in the absence of what is commonly considered a hearing loss." (Sineps and Hunter, 1997)
- "…auditory processing disorders can coexist with hearing loss…" (Bellis, 2002)

Sineps, D. and Hunter, L. (1997). I Can Hear But…When Auditory Perception and Listening Break Down: Implications For Language and Reading. Paper presented at the International Dyslexia Association Annual Conference, Minneapolis, MN, November 13, 1997, Session T-45.

Bellis, T.J. (2003). When The Brain Can't Hear: Unraveling The Mystery of Auditory Processing Disorder. New York, NY: Atria, p. 22.

Central Auditory Processing Disorder

- CAPD is not well defined
- May be due to under myelinated corpus callosums
- Those with CAPD process sounds at a slower rate.
- High rate of Otitis Media (ear infections)

Barkley, R. A. (2002). ADHD and Oppositional Defiant Children. Seminar Presented February 19-20, 2002, Phoenix, AZ.

Sineps, D. and Hunter, L. (1997). I Can Hear But…When Auditory Perception and Listening Break Down: Implications for Language and Reading. Paper Presented at the International Dyslexia Association Annual Conference, Minneapolis, MN, November 13, 1997, Session T-45.

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

CAPD and AD/HD

- Comorbidity rates between 45 and 75%
- CAPD will often respond to Stimulant Medication. (Tannock and Brown, 2000)
- Audiologist Vs Psychologist/Psychiatrist:
  - CAPD or AD/HD?
- CAPD may be Inattentive AD/HD (Barkley, 2002)

Tannock, R. and Brown, T.E. (2000). Attention-Deficit Disorders in Children and Adolescents, In T.E. Brown (Ed.), Attention-Deficit Disorders and Comorbidities in Children,Adolescents, and Adults. Washington, DC: American Psychiatric Press, pp. 231-296.

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

Barkley, R.A. (2002). AD/HD and Oppositional Defiant Children. Seminar Presented February 19-20, Phoenix, AZ.

Inattentive AD/HD

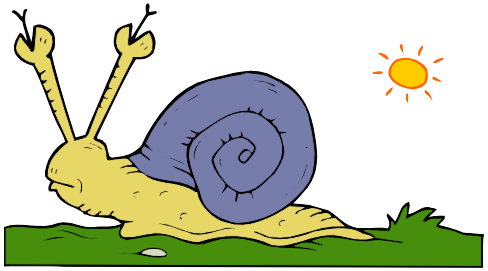
Attention-Deficit/Hyperactivity Disorder, Predominately Inattentive Type (DSM-IV, TR # 314.00)

- Brown believes the Inattentive Type has all the symptoms of the Combined Type except Hyperactivity-Impulsivity

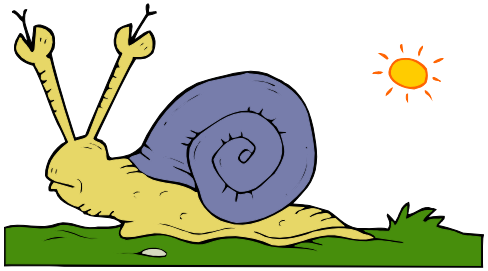
Inattentive AD/HD (Continued)

Brown believes the following are the areas of difficulty in the Inattentive Type:

1. Difficulty organizing and activating for work
2. Problems sustaining attention and concentration
3. Problems sustaining energy and effort



Brown and Inattentive AD/HD (Continued)

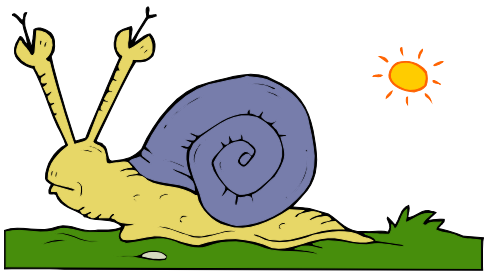


4. Problems managing affective interference
5. Problems utilizing working memory and accessing recall

Brown, T.E. (1995). Differential Diagnosis of ADD Versus ADHD in adults. In K.G. Nadeau (Ed.), Attention-Deficit Disorder in Adults. New York, NY: Bruner/Mazel, 93-108.

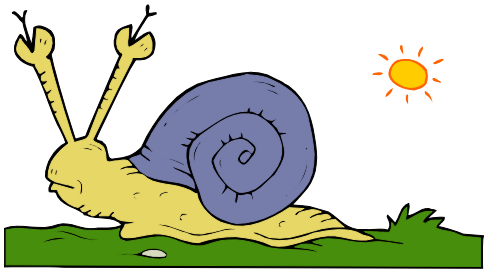
Barkley's Comments on Inattentive AD/HD Symptoms

- They tend to be in a FOG
- Not very Attentive
- High levels of Generalized Anxiety
- Lethargic
- Slow moving



Barkley (Continued)

- Slow intellectual processing speed
- Short-term memory problems
- Sequential memory problems
- Don’t fully process information



Barkley (Continued)

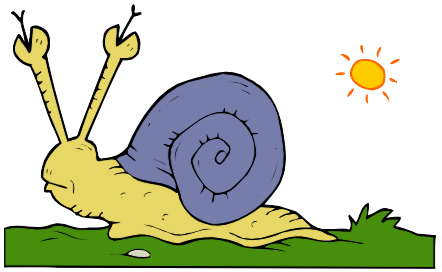
- Difficulty discerning relevant from irrelevant Information

Barkley, R.A. (1994). ADHD in Children, Adolescents and Adults: Diagnosis Assessment and Treatment. New England Educational Institute, Cape Cod Symposia, August, Pittsfield, MA.

Willcutt, Chhabildas and Pennington's Sluggish Cognitive Tempo Symptoms

- More problems with math achievement than Combined Type and "Normals".
- More Internalizing Problems than Combined Type/Few, if any Externalizing Problems
- Significant Processing Speed Problems

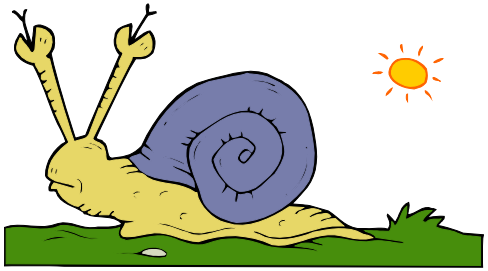
Willcutt, E.G., Chhabildas, N. and Pennington, B.F. (2001). Validity of the DSM-IV Subtypes of ADHD.ADHD Report,, 9 (1), pp. 2-5.



Attention-Deficit/Hyperactivity Disorder, Predominately Hyperactive-Impulsive Type (DSM-IV, TR #314.01)

- Tzelepis stated she has only seen Combined Type adults in her work and doubts the Predominately Hyperactive-Impulsive Type exists in adults.

Tzelepis, A. and Mapou, R. (1997, May). <u>Assessment</u>. Paper presented at the Pre-Conference Professional ADD Institute of the 3rd Annual National ADDA Adult ADD Conference, St. Louis, MO.



Brown

Brown called those who met DSM criteria for Hyperactive-Impulsive Type or Combined Type in Childhood, but only met criteria for Inattentive Type in Adulthood, "***CROSSOVERS***".

Brown, T.E. (1995). Differential Diagnosis of ADD Versus ADHD in Adults. In K.G. Nadeau (Ed.), A Comprehensive Guide to Attention-Deficit Disorder in Adults. New York: Bruner/Mazel, pp. 93-108.

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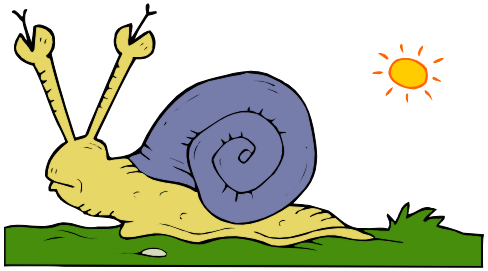
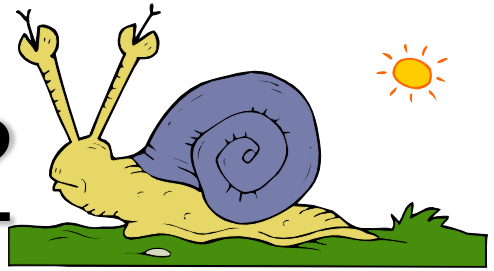
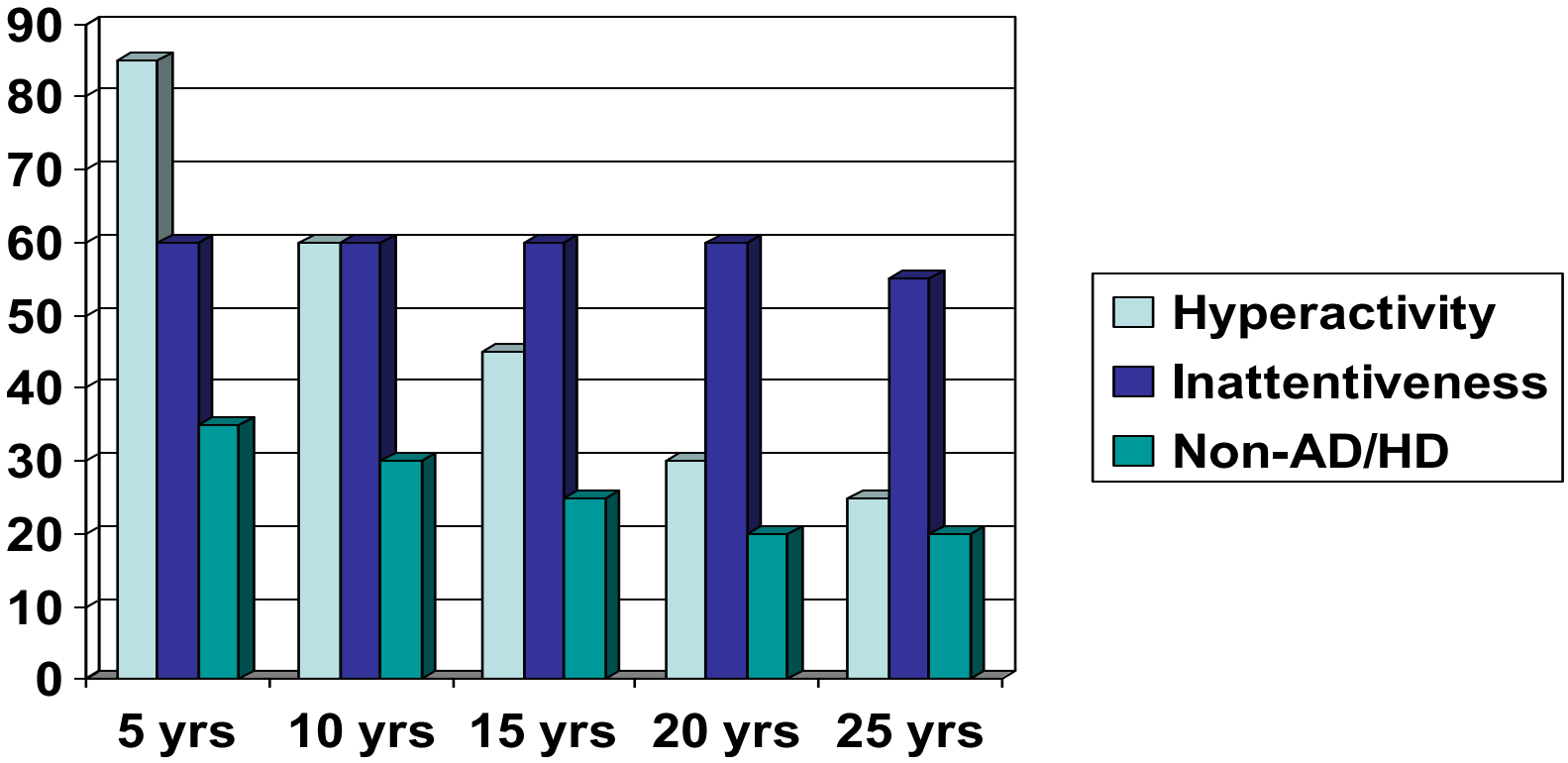


Crossovers?

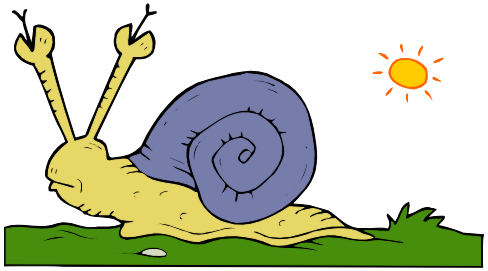




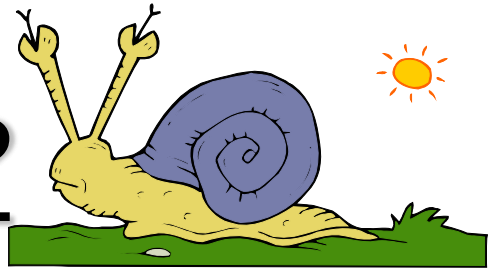
Crossovers (Continued)

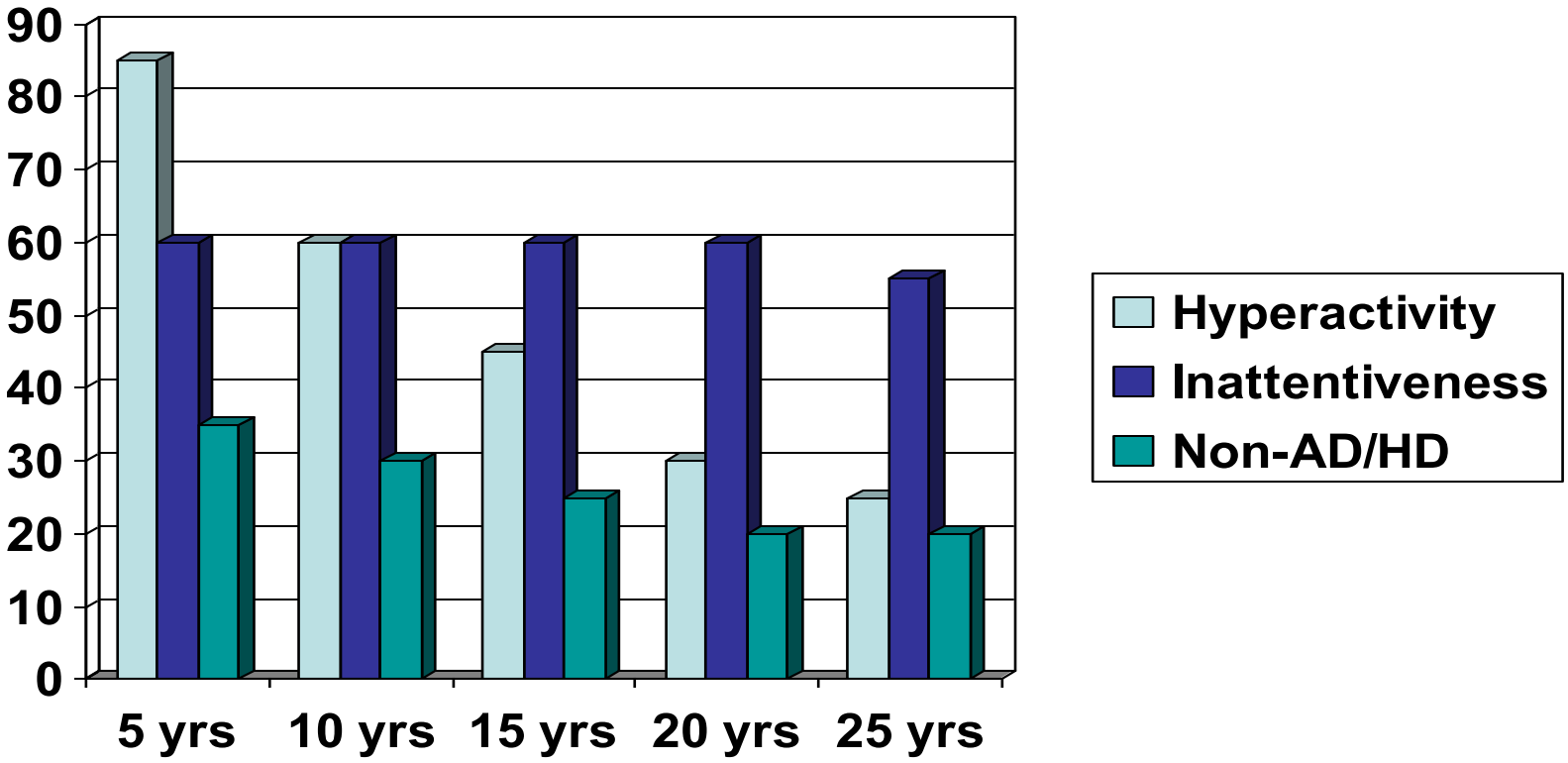
Barkley wrote when the Combined Type changes to the Inattentive Type by adolescence or adulthood then the person should be thought of as having the Combined Type.

Barkley, R.A. (2002B). ADHD and Oppositional Defiant Children. Seminar presented, February 19-20, Phoenix, AZ., The Institute for Continuing Education, Fairhope, AL.



Crossovers?



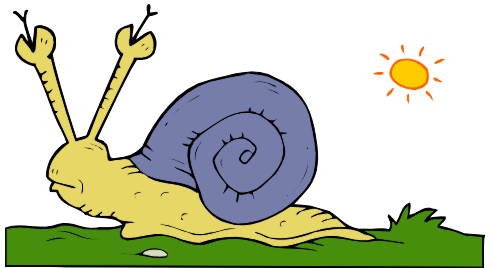


Mild Combined Type vs. Inattentive Type

30% to 50% of those with Inattentive AD/HD have the SCT subtype. The remainder are Shadow Syndrome Combined Type.

Barkley, R.A. (2002) Mental and Medical Outcomes of AD/HD. Pre-Conference Institute, # TPA1, Thursday October 17, 2002, 14th Annual CHADD International Conference, Miami Beach, FL.

TO GET THIS SLIDE GO TO: WWW.DRKEVINTBLAKE.COM



Adult AD/HD in DSM-V

1. “Is often easily distracted by extraneous stimuli
2. Often makes decisions impulsively
3. Often has difficulty stopping activities or behavior when he/she should do so
4. Often starts a project or task without reading or listening to directions carefully
5. Often shows poor follow-through on promises or commitments made to others
6. Often has trouble doing things in their proper order or sequence…”

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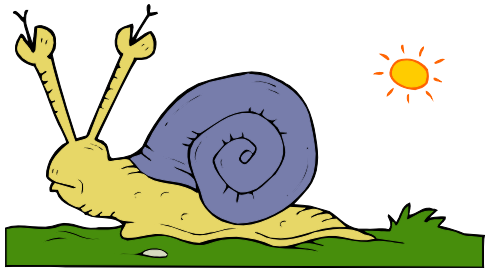

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1. “Is often easily distracted by extraneous stimuli
2. Often makes decisions impulsively
3. Often has difficulty stopping activities or behavior when he/she should do so
4. Often starts a project or task without reading or listening to directions carefully
5. Often shows poor follow-through on promises or commitments made to others
6. Often has trouble doing things in their proper order or sequence…”

Adult AD/HD in DSM-V

7. Often more likely to drive a motor vehicle much faster than others
8. Often has difficulty sustaining attention in tasks or leisure activities
9. Often has difficulty organizing tasks and activities" (p. 10)

Cutoff: 6 of 9; in two settings; onset before age 16

Barkley, R.A. and Murphy, K.R. (August 2006). Identifying New Symptoms for Diagnosing ADHD in Adulthood. ADHD Report, 14 (4), 7-11.

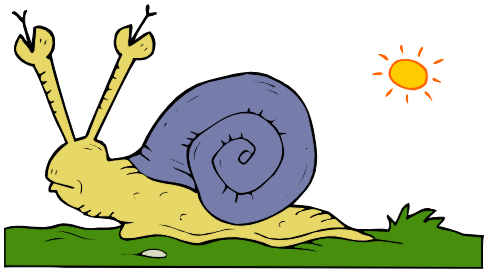
Inattentive AD/HD and LD

- Inattentive AD/HD is often confused with LD.

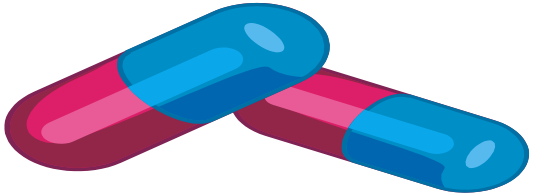
Barkley, R.A. (1998A). ADHD In Children, Adolescents, and Adults: Diagnosis, Assessment and Treatment, New England Educational Institute, Cape Cod Symposium, August, Pittsfield, MA.

- Inattentive Type *MAY* be related to Central Auditory Processing Disorder (CAPD)

Barkley, R.A. (2002B). ADHD and Oppositional Defiant Children. Seminar presented, February 19-20, Phoenix, AZ.



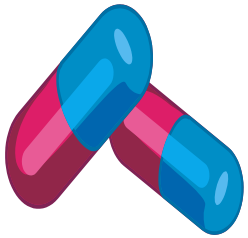
Medication and Inattentive AD/HD



- Only about 20% of those with Inattentive AD/HD respond to Stimulant Medication.
- Those with Sluggish Cognitive Tempo probably do not respond.

Barkley, R.A. (2002) Mental and Medical Outcomes of AD/HD. Pre-Conference Institute, # TPA1, Thursday October 17, 2002, 14th Annual CHADD International Conference, Miami Beach, FL.

Medication and Sluggish Cognitive Tempo AD/HD

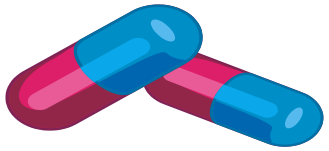


- Strattera (Atomoxetine):
  - Selective Norepinehrine Reuptake Inhibitor

    Good for depression & anxiety too
  - Schedule II: Not Controlled – Call in Scrips
  - Side Effects: insomnia, nausea, dry mouth, constipation, dizziness, decreased appitite, urinary difficulty, erectile disturbance, decrease libido, slight increase in blood pressure and pulse, liver problems (rare)

Author (2004). Managing Medication for Adults with AD/HD. National Resource Center on AD/HD (A Program of CHADD), p. 1-12; From Website: www.helpforadhd.org/documents/wwk10.pdf.

Medications and Sluggish Cognitive Tempo AD/HD



- Provigil (Modafinal)
  - Will be marketed at "***Sparlon***" as an AD/HD medication
  - Significantly reduces inattention, hyperactivity and impulsivity in home and school, no withdrawal rebound
  - Few side effects: Insomnia (28%), Headache (22%), Decreased Appetite (18%), Abdominal Pain; Insomnia and Appetite problems decrease with time
  - Low abuse potential/Not a controlled substance-Schedule IV Medication
  - May increase right frontal lobe wakefullness, alerting and executive functioning

Medication and Sluggish Cognitive Tempo AD/HD (Continued)

- The FDA recently rejected approving Modafinil as an AD/HD medication.

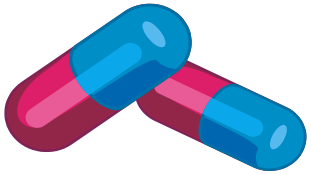
Author (February/March, 2006) Two New Medications Promise greater Convenience, Smaller Potential for Abuse. ADDitude, 6 (4), p. 11.

Kelly, J. (August, 2005). Phase III Trials Demonstrate Modafinil Efficacy in ADHD. NeuroPsychiatry Reviews, 6 (7), www.neuropsychiatryreviews.com/aug05/modafinil.html .

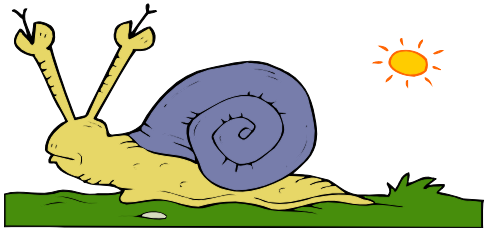
Author (March 24, 2006). FDA Committee Rejects ADHD use for Modafinil. National Public Radio report. Available from website: www.npr.org/templates/story.php?StoryId=5298885 .

Other Reference of Interest

Biederman, J., Swanson, J., Wigal, S.B., Kratohvil, C.J., Boellner, S.W., Earl, C.Q., Jiang, J. and Geenhill, L. (December, 2005). Efficacy and Safety of Modafinil Film-Coated Tablets In Children and Adolescents with Attention-Deficit/Hyperactivity Disorder: results of A Randomized, Double-Blind, Placebo-Controlled Flexible-Dose Study. Pediatrics, 116 (6), pp. e-777-e-784; From Website: www.pediatrics.aappublications.org/cgi/content/full/116/6/e777 .



Conclusion about Inattentive ADHD



- It is a separate and distinct disorder form the Combined Type

Milich, Balentine, and Lynam, 2002; Barkley, 2002A; McBurnett, 2001; Brown, 1997

- Most likely in DSM-V the Combined Type will be in the Disruptive Behavior Disorders Section. The Inattentive Type will be elsewhere.

Barkley, R.A. (2002A-Tape-1). <u>ADHD Symposium: Nature, Diagnosis and Assessment, Comorbidity and Developmental Course of ADHD</u>. University of Massachusetts, January, Distributed by Stonebridge Seminars, Westborough, MA 01581.

Diagnosing CAPD

- **Team approach:**
  - **Audiologist (Case Manager)**
  - **Speech-Language Pathologist**
  - **Educator**
  - **Psychologist**
  - **Parents**

Bellis, T.J. (1996). Assessment and Management of Central Auditory Processing DisordersIn the Educational Setting: From Science to Practice. San Diego, CA: Singular.

*****National Coalition for Auditory Processing Disorders:*** www.ncapd.org

TO GET SLIDE GO TO: WWW.DRKEVINTBLAKE.COM

Diagnosing CAPD

- Physicians – “If there is a disease or disorder related to hearing, you may be referred to an otolaryngologist, a physician who specializes in diseases and disorders of the head and neck.” (National Institute on Deafness and Other Communication Disorders, May 8, 2002, p. 3)
- American Medical Association: www.ama-assn.org

Treating CAPD

- Help with Grieving Process
- Environmental Modifications
  - FM Loop Systems, Amplification, Seating, Etc.
- Remediation (Direct Therapy)
  - Phonological Awareness, Temporal Patterning, Prosody Training, Interhemispheric Training
- Compensatory Strategies

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

FM Loop System

Website: www.harriscomm.com

http://www.harriscomm.com/catalog/default.php?cPath=1141_46_158

Sound Suppression Technology

Bose QuietComfort Sound suppression headphones:
www.**bose**.com

Helpful Websites for CAPD

- National Institute on Deafness and Other Communication Disorders: www.nidcdinfo@nidcd.nih.gov
- American Academy of Audiology: www.audiology.org
- American Speech-Language Hearing Association: www.asha.org
- National Coalition for Auditory Processing Disorders: www.ncapd.org
- American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS): www.entnet.org

How to Make your Classroom Acoustically Available

- CAPD students sit in first row.
- Provide good lighting in the room.
- Avoid assigning a teacher to student who DOES NOT speak with a common or local accent.
- Acoustical tile in the ceiling
- Carpeting with thick carpeting pad on the floor
- Beards and moustaches need to be well trimmed away from lips. This allows for better speech reading.
- No mini-blinds! Draperies! Draperies absorb ambient sound better.

Classroom Acoustics

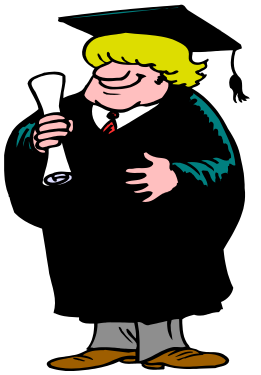
- The American Speech-Language Hearing Association (www.asha.org) has a position paper on this that includes a comprehensive bibliography: Paper number 37, supplement 14.
- The Counsel of Educational Facility Planners International (CEFPI) has the following article on their website about how to build in good classroom acoustics:
- Erdreich, J. (July, 1999). Teaching in the Dark. Brief on Educational Facilities.

Other Seminar Dr. Blake Does for Cross Country Education

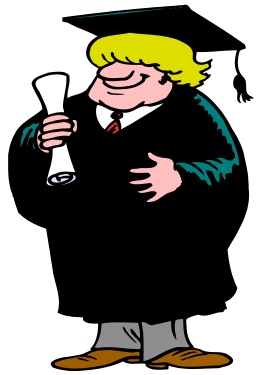
Assessment and Treatment of Dyslexia in Adolescents and Adults: No Adults Left Behind

- Six hour seminar with continuing education credits
- Audiotapes and CD available for the current seminar and the “Dyslexia” seminar from:

  www.crosscountryeducation.com



Kevin T. Blake, Ph.D., P.L.C.



- ***Case Consultation***
- ***Secondary & Post Secondary Education and Employer Consultation***
- ***Program Development***
- ***Staff Training & Conference Presentations- Learning Disorders, Dyslexia, AD/HD, Autism Spectrum Disorders; Children, Adolescents & Adults***
    - ***520-327-7002***
    - ***www.drkevintblake.com***

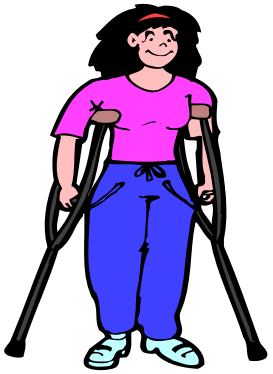
Appendix

Helpful Resources

"…Developing A Comprehensive Treatment Plan"

- Dr. Blake is not going to teach you the basics of treatment planning.
- A good article on how to do "basic" treatment planning with these populations:
- ***Blake, K.T. (Fall, 2004). Improving the dyslexic child's social skills by attending to their neurobiological differences. Perspectives, 30 (4), 6-9.***
- Available from: International Dyslexia Association website: **www.interdys.org**

What is a "Disability"?



- With adults the term disability has become a legal term of art since the passage of the American's with Disability Act (ADA).
- One must be impaired compared to the Average American.
- Highly Controversial

Gordon, M., and Keiser, S. (Eds.) (1998). Accommodations in Higher Education Under the Americans with Disabilities Act: A No-Nonsense Guide for Clinicians, Educators, Administrators, and Lawyers. New York, NY: Guilford.)

ARK Foundation's Learning Window & NVLD

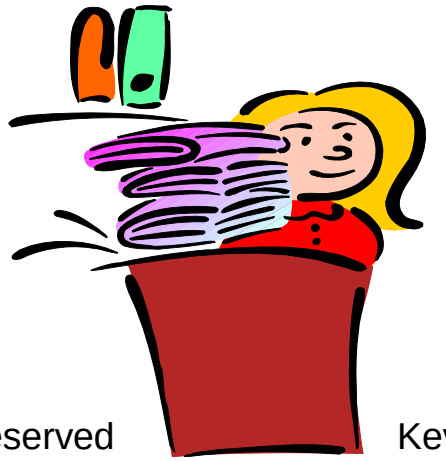
Neff, B., Neff-Lippman, J., and Stockdale, C. (2002). The Source for Visual-Spatial Disorders. East Moline, IL: LinguiSystems, p. 176.)

ARK Institute of Learning:

www.arkinst.org

Excellent Resource on NVLD Treatment

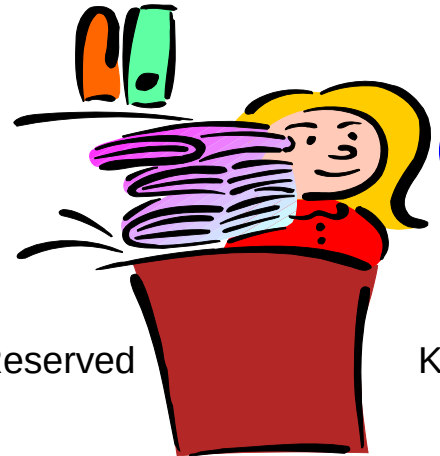
- Neff, B., Neff-Lippman, J., and Stockdale, C. (2002). The Source for Visual-Spatial Disorders. East Moline, IL: LinguiSystems, p. 176.)



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" (p. 21).

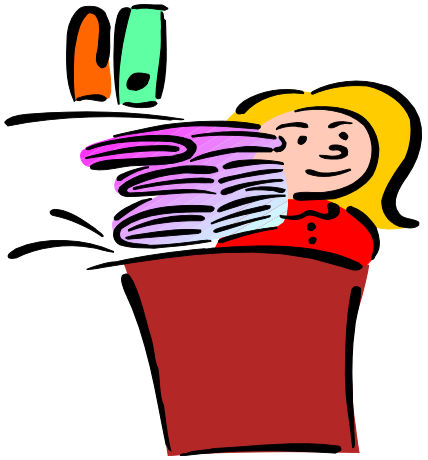
Semrud-Clikeman, M. (Spring, 2003). Executive Function and Social Communication Disorders. Perspectives, 29 (2), p. 20-22.)



Good Social Skills Program

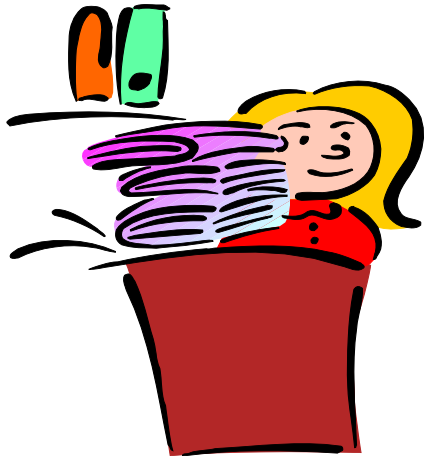
Social Competence Intervention Program

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.



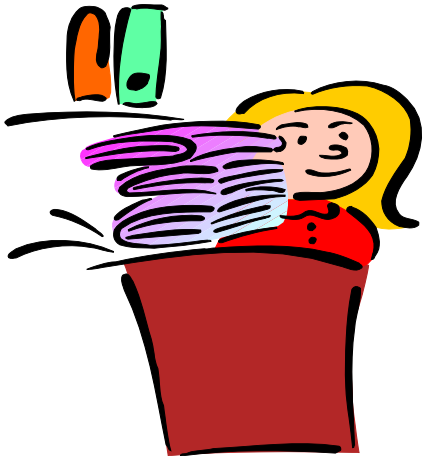
Great Resource For Asperger's and General Social Skills

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

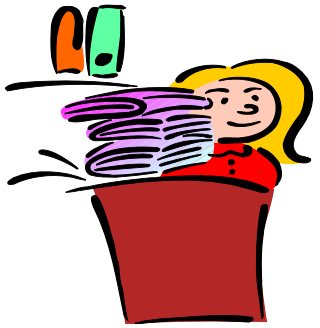


Great Resource for Adult AD/HD & Social Skills

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



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:

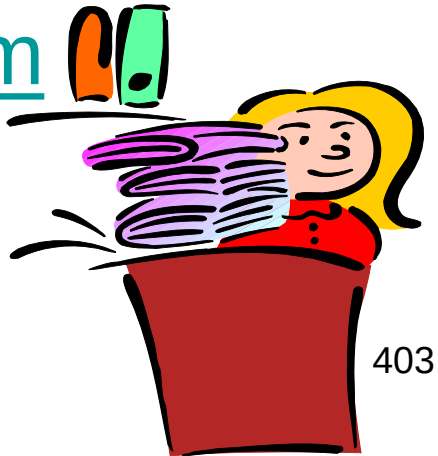
- www.**boystownpress**.org
- www.girlsand**boystown.org**

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

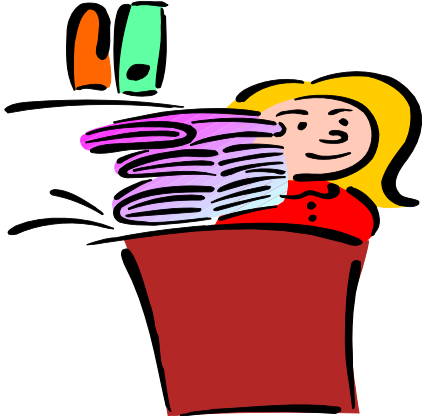
Wilson Anderson's Social Skill Program

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

www.edconsultmidwest.com



Asperger's Social Skills Intervention Programs

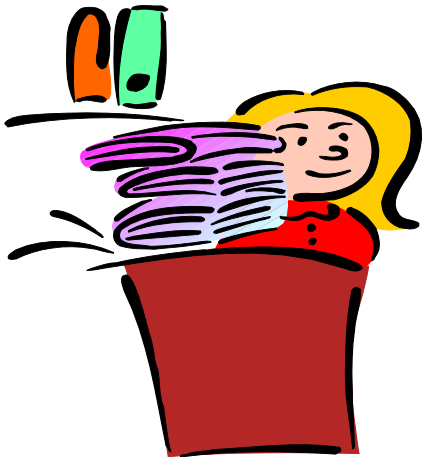


Carol Gray's – Social Stories Unlimited- Future Horizons: http://www.futurehorizons-autism.com/

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. Kunce (Eds.), Asperger's Syndrome or High-Functioning Autism. New York, NY: Plenum.

Good Resource About Asperger's Disorder:

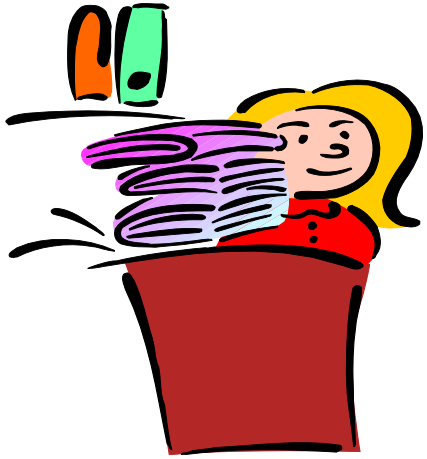
Attwood, T. (1998). Asperger's Syndrome: A Guide for Parents and Professionals. Bristol, PA: Jessica Kingsley.



Other Good Books on Asperger's Disorders

- Attwood, T. (2007). The Complete Guide to Asperger's Syndrome. Philadelphia, P.A.
- Goldstein, S., Naglieri, J.A., Ozonoff, S. (2008). Assessment of Autism Spectrum Disorders. New York, NY: Guilford.
- Klin, A., Volkmar, F.R. and Sparrow, S.S. (2000). Asperger Syndrome. New York, NY: Guilford.

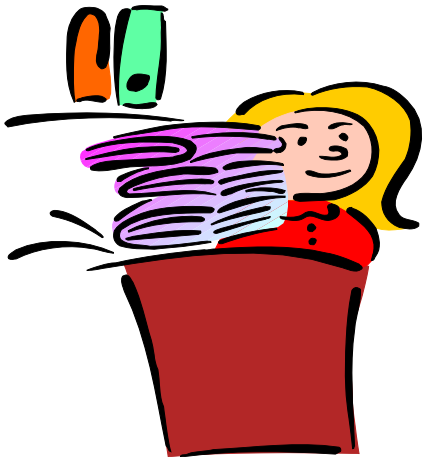
Good Publisher of Autism Spectrum Books



- Future Horizons: http://www.futurehorizons-autism.com/

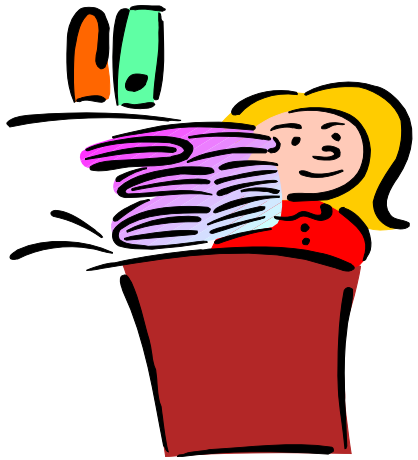
Good Resource About Asperger's Disorder:

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



Good Resource About NVLD:

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

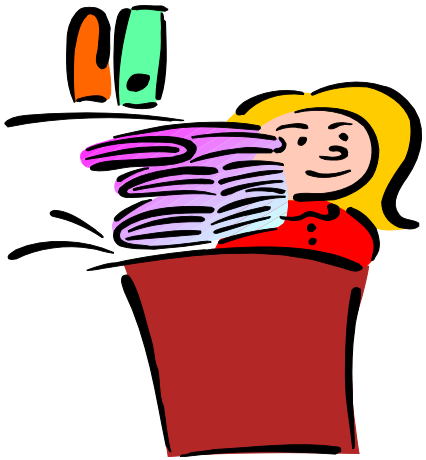


Good Websites on NVLD

- NLD on the Web:
- www.nldontheweb.org
- Byron Rourke's Website: www.nld-bprourke.ca

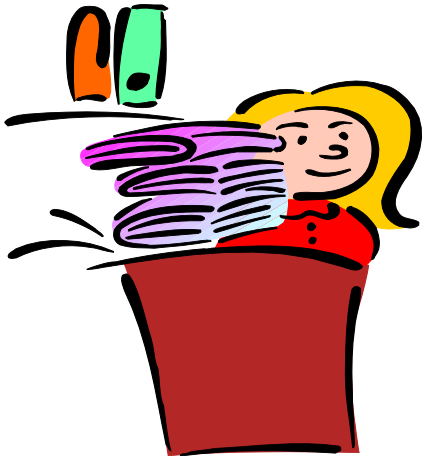
Good Resource On Dyssemia & Nonverbal Social Skills

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



Good General Resource on Adults with LD &/or AD/HD

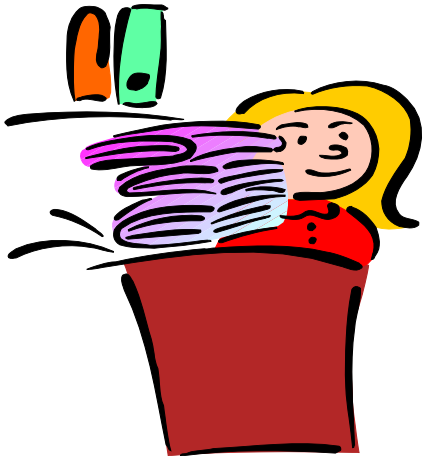
Roffman, A.J. (2000). Meeting the Challenge Of Learning Disabilities in Adulthood. Baltimore, MD: Brookes.



A Good Book That Summarizes Recent Research Into Learning Disorders

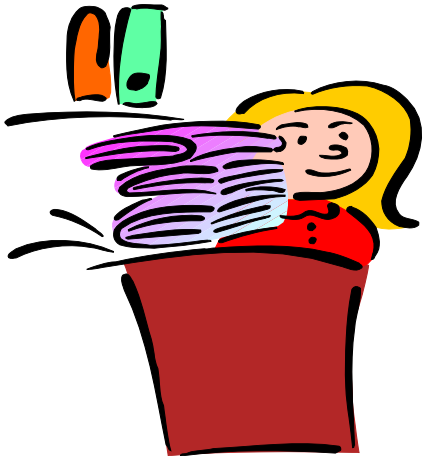
- Fletcher, J.M., Lyon, G.R., Fuchs, L.S., and Barnes, M.A. (2007). Learning Disabilities: From Identification to Intervention. New York, NY: Guilford.

http://www.guilford.com/cgi-bin/cartscript.cgi?page=pr/fletcher.htm&dir=pp/neuropsych&cart_id=169929.5486



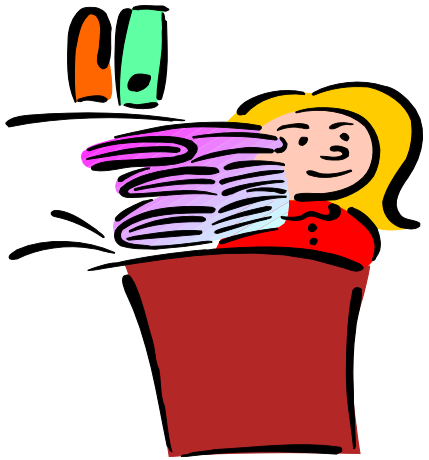
Good General Book on Classroom Techniques for LD &/or AD/HD Children

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



Good General Book On Classroom Interventions With Dyslexics

Richards, R. (1999). The Source for Dyslexia and Dysgraphia. Moline, IL: LinguiSystems.

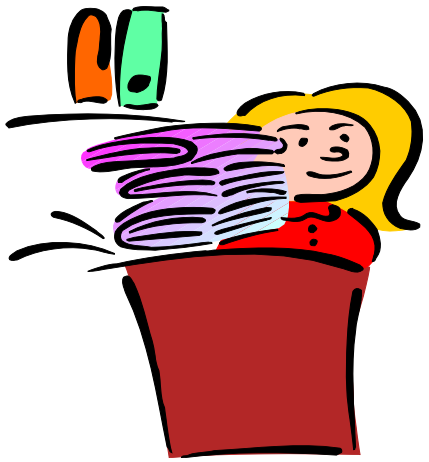


Great Research Books on AD/HD

- Barkley, R.A. (2006). Attention-Deficit Hyperactivity Disorder, Third Edition. New York, NY: Guilford.
- Barkley, R.A., Murphy, K.R. and Fischer, M. (2008). ADHD In Adults: What The Science Says. New York, NY: Guilford.

Excellent Book for Those Working With AD/HD Children

Barkley, R. A. (2005) Taking Charge of ADHD: The Complete, Authoritative Guide for Parents (3rd edition). New York: Guilford.

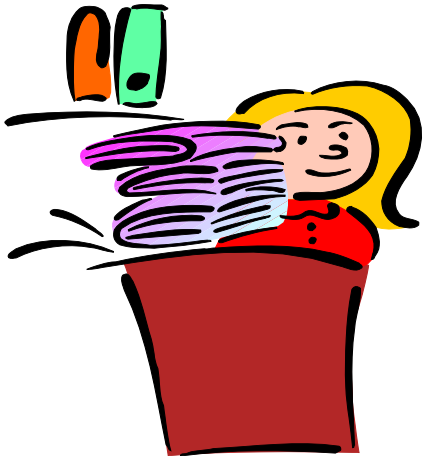


Good Books On How to Work With AD/HD People

Author (2005). The New CHADD Information and Resource Guide for AD/HD. Landover, MD: CHADD.

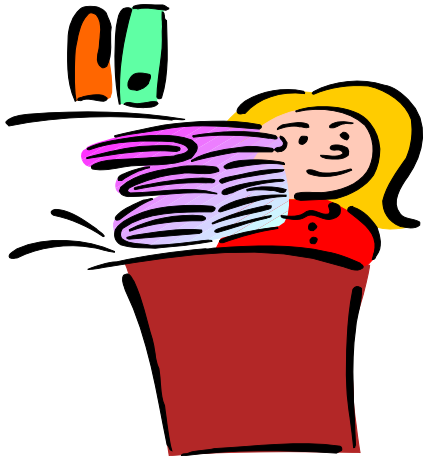
Author (2006). CHADD Educator's Manual. Landover, MD: CHADD.

Available from: www.chadd.org



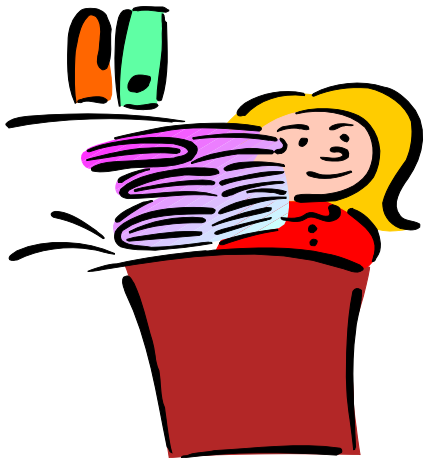
Great Book On How To Teach AD/HD Children

Zentall, S. (2006). ADHD and Education: Foundations, Characteristics, Methods, and Collaborations. New York, NY: Merrill.



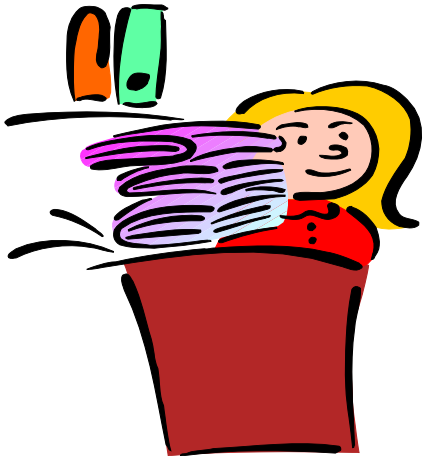
Good Book on Accommodations for LD &/or AD/HD Students

Mather, N., Jaffe, L. (2002). Woodcock Johnson III: Reports, Recommendations, and Strategies. New York, NY: John Wiley.



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.



Helpful Organizations

- Learning Disabilities Association (LDA): www.lda.org
- International Dyslexia Association (IDA): www.interdys.org
- Children and Adults with Attention Deficit Disorders (CHADD): www.chadd.org
- National Attention Deficit Disorder Association (ADDA): www.add.org

Helpful Organizations

- Nonverbal Learning Disabilities Association (NLDA): www.nlda@nlda.org
- MAAP Services for Autism and Asperger's Disorder: www.maapservices.org
- ADD WareHouse: www.addwarehouse.com
- LinguiSystems: www.linguisystems.com

HELPFUL BOOKS ON DYSLEXIA FOR PROFESSIONALS AND LOVED ONES

- Mather, N. and Goldstein, S. (2001). Learning Disabilities and Challenging Behaviors. Baltimore, MD: Brookes.
- Reid, G. & Fawcett, A. (2004). Dyslexia in Context. Philadelphia, PA: Whurr.
- ***Nosek, K. (1997). Dyslexia in Adults. Dallas, TX: Taylor.***
- Bartlett, D. & Moody, S. (2000). Dyslexia in the Workplace. Philadelphia, PA: Whurr.
- Goldstein, S. (1997). Managing Attention and Learning Disorders in Late Adolescence & Adulthood. New York, NY: John Wiley & Sons.
- ***Silver, L.B. (2006). The Misunderstood Child, 4th Edition. New York, NY: Crown.***

****BOOKS IN THIS FONT ARE GOOD FOR THE LAYPERSON***

HELPFUL BOOKS ON DYSLEXIA FOR PROFESSIONALS AND LOVED ONES

- ***Richards, R.G. (1999). The Source for Dyslexia and Dysgraphia. East Moline, IL: LinguiSystems.***
- ***Roffman, A.L. (2000). Meeting the Challenge of Learning Disabilities in Adulthood. Baltimore, MD: Brookes.***
- Wren, C. & Einhorn, J. (2000). Hanging by a Twig: Understanding and Counseling Adults with Learning Disabilities. New York, NY: Norton.
- ***Rodis, P., Garrod, A., & Boscardin, M.L. (2001). Learning Disabilities & Life Stories. Boston, MA: Allyn and Bacon.***
- ***Shaywitz, S. (2003). Overcoming Dyslexia. New York, NY: Knopf.***

****BOOKS IN THIS FONT ARE GOOD FOR THE LAYPERSON***

AD/HD Books for Parents

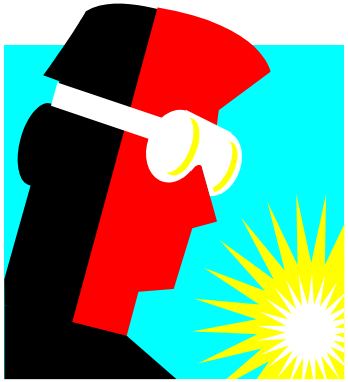
- Barkley, R. A. (2005) Taking Charge of ADHD: The Complete, Authoritative Guide for Parents (3rd Edition). New York: Guilford.
- Barkley, R. A., & Benton, C. (1998). Your Defiant Child: 8 Steps to Better Behavior. New York: Guilford.
- Silver, L.B. (2006). The Misunderstood Child, 4th Edition. New York, NY: Crown.
- Tridas, E.Q. (2007). From ABC to ADHD: What Parents Should Know About Dyslexia and Attention Problems. Baltimore, MD: International Dyslexia Association.

People Who Can Help with NVLD/Asperger's Disorder

- American Speech-Language Hearing Association: www.professional.asha.org
- Behavioral

  Neurologist/Neuropsychiatrists and/or Neuro-Ophthamologist: www.anpaonline.org and

  www.ama-assn.org
- Mental Health Professionals
- American Occupational Therapy Association: www.atoa.org



Helpful Websites NVLD and Asperger's Disorder

- www.nldontheweb.org
- Nonverbal Learning Disability Association: www.**nlda**.org
- LD Online: www.**ldonline**.org
- MAAP Services for Autism and Asperger's Disorder: www.maapservices.org
- UC Davis M.I.N.D. Institute: www.ucdmc.ucdavis.edu/MINDInstitute
- Yale Child Study Center: 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: LinguiSystems.

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: LinguiSystems.

Good Book on Transitioning

Ford, A. (2007). On Their Own: Creating an Independent Future for Your Child with Learning Disabilities and ADHD. New York, NY: Newmarket Press.

Transition Programs

- Landmark College (Putney, VT): www.**landmarkcollege**.org/
- Chapel Haven West: (CHWEST) is a Transitional Residential Program serving adults in the Autism Spectrum and those with mild Developmental Disabilities located in Tucson, Arizona.

  http://www.iser.com/chapelhaven-CT.html
- Life Development Institute (Phoenix, AZ): http://www.lifedevelopmentinstitute.org/
- Brehm OPTIONS Program (Carbondale, IL):

  http://www.options.brehm.org/

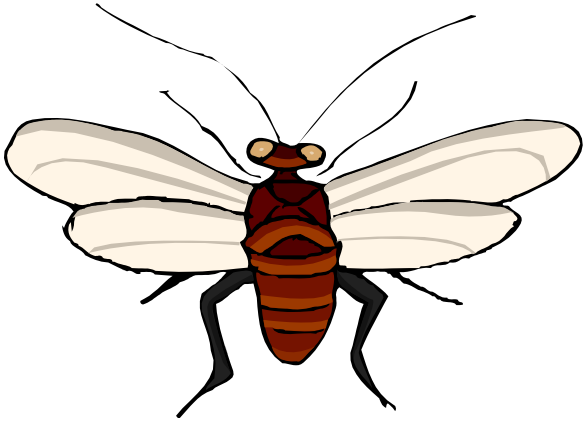
There are other programs across the country.

Alternative and Integrative Medicine Treatments for LD, AD/HD, NVLD and Asperger's Disorder

Alternative and Integrative Medicine Treatments of AD/HD & LD

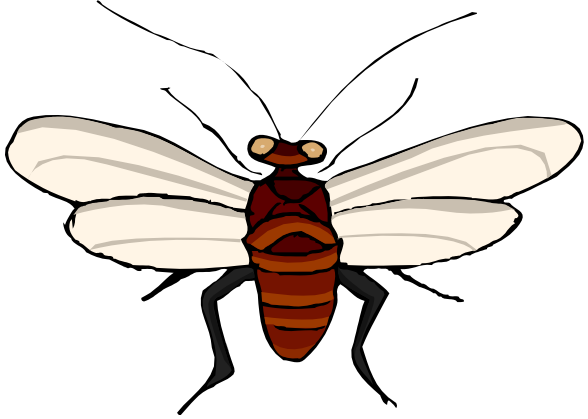
"***We should all eat dung, because a thousand flies can't be wrong!"***

Russell Barkley, Ph.D.



Barkley, R.A. (1998). ADHD in Children, Adolescents, and Adults: Diagnosis Assessment and Treatment. New England Educational Institute, Cape Cod Symposia, August, Pittsfield, MA.

Controversial Treatments



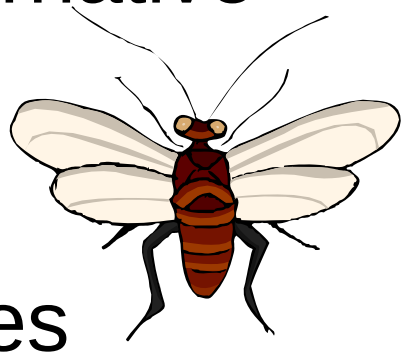
When to question if a treatment is legitimate:

- when no research in peer-reviewed journal is available;
- when they say, “traditional medicine,etc.” refuses to accept what they are saying;
- if most professionals would not use the method; and
- when the person pushing the treatment says, “…prove me wrong… (p.4).

Silver, L. (Summer, 2001). Controversial Therapies, Theme Editor’s Summary. Perspectives, 27 (3), pp.1 and 4.

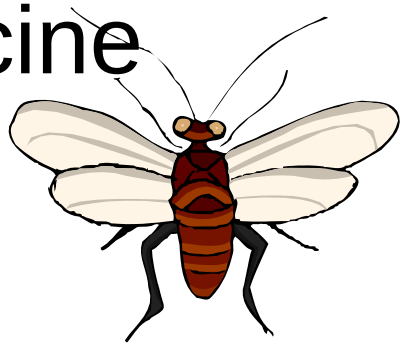
Alternative and Integrative Medicine Treatments of AD/HD & LD

- 56% of those with Anxiety use alternative treatments.
- 53% with Depression
- 16% of hospital offer CAM therapies
- Highest rates used by those with serious and debilitating conditions



Dittmann, M. (June, 2004). Alternative Health Care Gains Steam. Monitor On Psychology, 35 (6), pp. 42-44.

Alternative and Integrative Medicine Treatments of AD/HD & LD

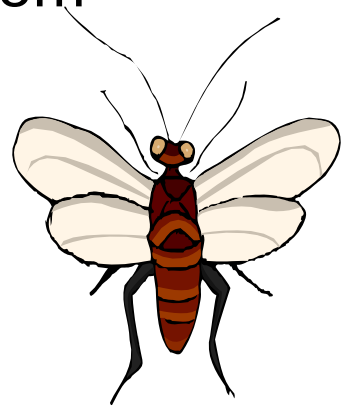


- "Today's complementary and alternative medicine is tomorrow's mainstream, but first it must meet with rigorous scientific evaluation."
- –Alan Leshner, Ph.D., National Advisory Council for Complementary and Alternative Medicine and CEO of the American Association for the Advancement of Science (p. 44).

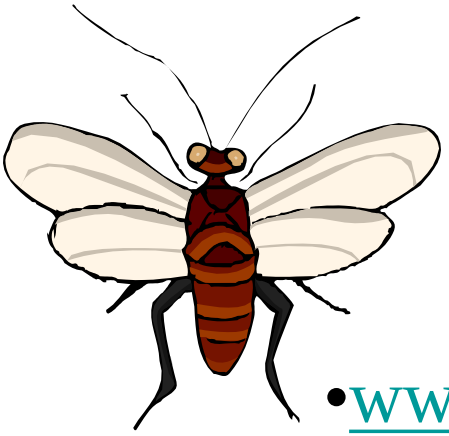
Dittmann, M. (June, 2004). Alternative Health Care Gains Steam. Monitor On Psychology, 35 (6), pp. 44.

Alternative, Integrative & Complementary Medicine and LD and AD/HD

- December 2003 edition of ***Attention!*** Available from CHADD.
- CHADD's National Resource Center
- www.MyADHD.com
- Rappaport, L.A., & Kemper, K.J. (2003). Complimentary and Alternative Therapies in Childhood Attention and Hyperactivity Problems. Developmental and Behavioral Pediatrics, 24, pp. 4-8.
- Silver, L. (Summer, 2001). Controversial Therapies, Theme Editor's Summary. Perspectives, 27 (3), pp.1 and 4.



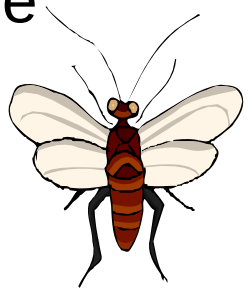
Places to Check Out "New" Treatments for AD/HD and LD



- Ingersoll, B., and Goldstein, S. (1993). Attention-Deficit Disorder and Learning Disabilities: Realities Myths and Controversial Treatments. New York, NY: Doubleday.
- www.quackwatch.com
- Cochrane Collaboration: www.cochrane.org
- Arnold, E. (August, 2006). Alternative and Complementary Treatments for AD/HD. Attention!, 13 (4), 30-35

Places To Check Out "New" Treatments For AD/HD and LD: National Institute of Health (NIH)

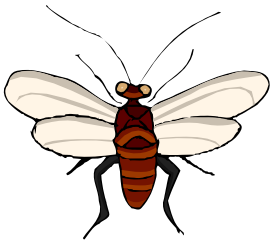
- National Center for Complimentary and Alternative Medicine: www.nccam.nih.gov
- NCCAM Clearinghouse: 888-644-6226
- Some findings:
  - St. John's Wort (Hypericum Perforatum) no better than placebo with Major Depression. Now being studied with "Minor" Depression-There is some research that St. John's Wort can help with mild to moderate depression. ***More research is needed!***



Dittmann, M. (June, 2004). Alternative Health Care Gains Steam. Monitor On Psychology, 35 (6), pp. 42-44.

Autor (March 2004). Get the Facts: St. John's Wort and The Treatment of Depression. National Center for Complementary and Alternative Medicine, National Institutes of Health, NCCAM Publication #: D005: www.nccam.nih.gov/health/stjohnswort/

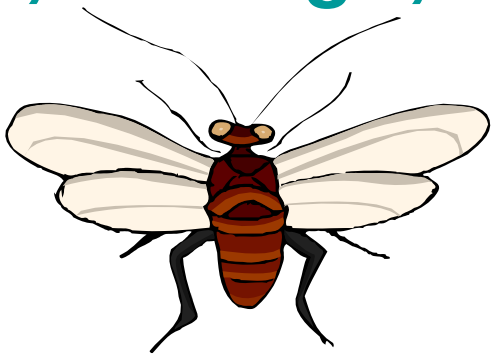
Places to Check Out "New" Treatments for AD/HD and LD



- www.interdys.org
- www.chadd.org
- Cook, P. (1997). Knowledge is Power: Guidelines for Being an Informed Health Care Customer. Attention!, 4 (2), pp. 14-17.
- Arnold, L.E. (2002). Contemporary Diagnosis and Management of Attention-Deficit/Hyperactivity Disorder. Newtown, PA: Handbooks in Health Care.
- Author (May, 2004). Dangerous Supplements: Still at Large. Consumer Reports, 69 (5), pp. 12-17.
- Office of Dietary Suppliments (ODS), National Institutes of Health: www.ods.nih.gov
- CAM on PubMed-National Library of Medicine: www.nim.nih.gov/nccam/comon/pubmed.html

PLACE TO CHECK OUT CAM THERAPIES

Ingersoll, B. (October 26, 2006). Complementary Treatments for AD/HD. Paper Presented at the 18th Annual CHADD International Conference, Chicago, IL.



Speech and Language Disorders

Speech and Language Disorders

- Nicholas Cummings told a story about a young man with social phobia and stuttering who could not get a date. He still could not get a date after his social phobia was cured because he stuttered. The stuttering had to be taken care of before he could get a date.

Cummings, N. (1991). Targeted Intermittent Therapy Throughout the life Cycle. Workshop presented at the Annual Arizona Psychological Association Conference, Scottsdale, AZ.

Speech and Language Disorders

- "A language disorder differs from a speech disorder. Speech disorders are abnormalities of speech, as articulation difficulties…, voice disorders…, or fluency…Language disorders are much broader, encompassing disorders of the entire spectrum of communication and verbal behavior, including such problems as delayed speech; disorders of vocabulary, word meanings, or concept formations; misapplication of grammatical rules and syntax; and poor language comprehension" (Lerner, 1997, p. 370).

Lerner, J. (1997). Learning Disabilities: Theory, Diagnosis and Teaching Strategy, Seventh Edition. Boston, MA: Houghton Mifflin, p. 370.

Speech Disorders

- Voice: "…is generated from the lungs as the vocal folds are brought closer together. The vocal folds vibrate when air is pushed past them with sufficient pressure…"
  - An estimated 7.5 million in the US have problems with loudness, pitch and quality.

National Institute of Deafness and Other Communication Disorders (May 8, 2002). Health Information: Voice, Speech and Language. From NISCD website: www.nidcd.nih.gov , p. 2.

Speech Disorders

- "Speech is produced by precisely coordinated muscle actions in the head, neck, chest and abdomen. Speech Development is a gradual process that requires years of practice…It is estimated that by first grade five percent of children have noticeable speech disorders"

National Institute of Deafness and Other Communication Disorders (May 8, 2002). Health Information: Voice, Speech and Language. From NISCD website: www.nidcd.nih.gov , p. 3.

Other Language Problems

- “Phonology is the system of speech sounds in a language” (p. 363)
- “Morphology is the system of meaning units in a language” (P. 363).
- “Syntax refers to the grammar of language-the way words are strung together to form sentences” (p. 364).
- “Semantics refers to word meanings in language” (p. 365).

Lerner, J. (1997). Learning Disabilities: Theory, Diagnosis and Teaching Strategy, Seventh Edition. Boston, MA: Houghton Mifflin.

Other Language Problems

- Pragmatics is the social side of language, dealing with the relationship between the speaker and the context…the relationship between the speaker and the listener…" (p. 365).

Lerner, J. (1997). Learning Disabilities: Theory, Diagnosis and Teaching Strategy, Seventh Edition. Boston, MA: Houghton Mifflin.

Other Language Problems

- "***Receptive Language Difficulties*** **Receptive language involves understanding what is spoken or written by others and relating speech to words and meaning. People with receptive language problems tend to have a limited vocabulary and often fail to understand the subtleties of figurative speech. Slow to respond to verbal stimuli and requiring extra time to process verbal input, they frequently appear…**

Other Language Disorders

- "…puzzled when given oral instructions and may need directions repeated several times before they are able to grasp what it is they are being asked to do. These individuals are often challenged when asked to learn rules of a new game or to understand explanations of new procedures" (p. 17)

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

Other Language Disorders

- ***"Expressive Language Disorder*** Difficulty producing language by speaking or writing is known as, expressive language disorder. Adults with this problems area may appear nonfluent at times as they stammer, or use 'uh' excessively. They may omit, substitute, distort, or add sounds in words. Further they may often search for words and may refer to 'whatchamacallit' and 'whoosit' on a fairly regular basis, or they may use definitions for objects whose name they cannot recall…

Speech and Language Disorders

- Comorbidity with LD, NVLD, AD/HD and Asperger's
  - Lyon reported that children with language disorders and/or speech and language disorders are at high risk for psychiatric comorbidity.

Lyon, G.R. (1996). Learning Disabilities. In E.J. Marsh and R.A. Barkley (Eds.), Child Psychopathology. New York, NY: Guilford, pp. 390-435.

  - Clark wrote: "Follow-up studies of children diagnosed as having specific language impairment (SLI) have shown the incidence of reading disability to be 90 percent or greater…"

Clark, D.B. (1988). Dyslexia: Theory & Practice of Remedial Instruction. Parkton, MD: York, p. 30.

Speech and Language Disorders

- Wilkins, Garside and Enfield (1993) indicated early signs of Dyslexia are:
  - Difficulty learning to talk
  - Difficulty listening and following directions
  - Difficulty remembering
  - Difficulty pronouncing words correctly and/or expressing thoughts clearly

Wilkins, A., Garside, A. and Enfield, M.L. (1993). Basic Facts About Dyslexia: What Everyone Ought to Know. Baltimore, MD: Orton Dyslexia Society.

Speech and Language Disorders

- S and L with Dyslexia
  - …most dyslexics do not demonstrate these overt language impairments…most of them exhibit less discernible language-based deficits, such as phonological processing problems and lack of metalinguistic awareness…(Clark, 1988, p. 30)

Clark, D.B. (1988). Dyslexia: Theory & Practice of Remedial Instruction. Parkton, MD: York, p. 30.

Speech and Language Disorders

- Barkley (2002) reported:
  - 10 to 54% of those with AD/HD have Expressive Language Disorders
  - 60% of those with AD/HD have Pragmatic Disorders -They speak at you not to you.
  - They have delayed internalization of speech and have poor memory for verbal sequences.

Barkley, R.A. (2002). ADHD and Oppositional Defiant Children. Seminar presented February 19-20, 2002, Phoenix, AZ.

Speech and Language Disorders

- Asperger's Disorder and Semantic Pragmatic Language Disorder (SPLD):
  - "Common features are echolalia, poor conversation turn taking, unusual prosody, difficulty in accommodating the perspective of others, superficially good syntax with odd or inappropriate semantic content…repetitive interests and all have odd social play" (Attwood, 1998, p. 146).

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

Speech and Language Disorders

- Spontaneous Speech: Speaker has control and can take time to formulate ideas
- Demand Speech: Listener has control and speaker cannot take time to organize thoughts.

Silver, L. (1992). The Misunderstood Child: Guide for Children with Learning Disabilities, Second Edition. Blue Ridge Summit, PA: Tab Books.

Stuttering

- What is it?
  - “Stuttering is a disorder of speech fluency that interrupts the forward flow of speech. All individuals are disfluent at times, but what differentiates the person who stutters from someone with normal speech is the kind and amount of disfluentcies” (p. 1).

American Speech-Language Hearing Association (May 10, 2002). Stuttering. From website: www.asha.org/speech/disabilities/stuttering.cfm , p. 1-5.

Stuttering

- **“What is stuttering?** Stuttering is a communication disorder in which the flow of speech is broken by repetitions (li-li-like this), prolongations (llllike this), or abnormal stoppages (no sound) of sounds and symbols. Their may be unusual facial and body movements associated with the effort to speak” (P. 1).

(Stuttering Foundation of America, May 10, 2002). Frequently Asked Questions about Stuttering. From website: www.206.104.238.56/faq.htm, p.1-2.

Stuttering

- "…The speech disruptions may be accompanied by rapid eye blinks, tremors of the lips and/or face or upper body that a person who stutters may use in an attempt to speak. Certain situations, such as speaking before a group or talking on the telephone, tend to make stuttering more severe, whereas other situations, such as singing or speaking alone, often improve fluency" (p. 1).

National Institute of Deafness and Other Communication Disorders (May 10, 2002). Health Information: Stuttering. From website:

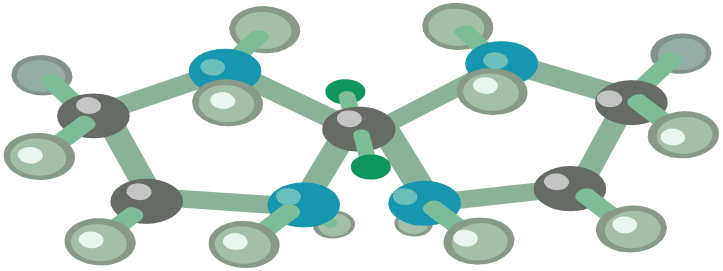
www.nidcd.nih.gov/health/pubs_vsl/stutter.htm, p. 1-6.

Stuttering

- “Most stutterers can recite poems or sing with relative ease but conversation can be distressing” (p. 53).

Neumann, K. (October/November 2006). Verbal Bottleneck. Scientific American: Mind, 17 (3), pp. 50-55.

Stuttering



- There is probably a genetic component to stuttering.
- Developmental Stuttering: Child's speech and language abilities are not able to meet their verbal demands. This type is usually outgrown.
- Neurogenic Stuttering: Poor neurological coordination; may be caused by stroke or brain injury.

National Institute of Deafness and Other Communication Disorders (May 10, 2002). Health Information: Stuttering. From website: www.nidcd.nih.gov/health/pubs_vs/stutter.htm. p. 1-6.

Stuttering

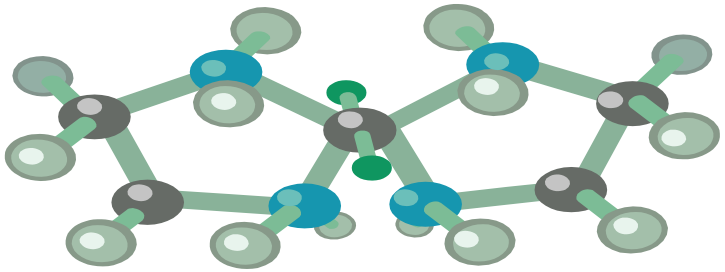
- What causes Stuttering?
  - 1928 Orton and Travis speculated that stuttering had a neurobiological basis.
  - PET scans of untreated stutters indicate higher activation of both hemispheres, especially the right than non-stutters.
  - Stutters monitor their speech more, their speech is more effortful and less automatic.

Kroll, R.M., and De Nil, L.F. (September 30, 2003). Neural Basis of Stuttering and Its Treatment. Stuttering Foundation of America. From website: www.stuttering.org/Research/Kroll.htm.

Stuttering

- “We still do not know what causes stuttering. It may be caused by different factors for different people…” (American Speech-Language Hearing Association, May 10, 2002, p. 4).

American Speech-Language Hearing Association (May 10, 2002). Stuttering. From website: www.asha.org/speech/disabilities/stuttering.cfm , p. 1-5.



Stuttering

- After reviewing the of results PET studies of adults who stutter and were given speech therapy Kroll and De Nil (September 30, 2003) concluded:
  - Stutters demonstrate atypical brain activation which is connected to a neurological underpinning.
  - There appears to be an acquired and innate aspect to stuttering.
  - The right hemisphere overactivation persists over a year post treatment. Points to congenital basis.

Kroll, R.M., and De Nil, L.F. ((September 30, 2003). Neural Basis of Stuttering and Its Treatment. Stuttering Foundation of America. From website: www.stuttering.org/Research/Kroll.htm.

Stuttering

- ***“There is no reason to believe that emotional trauma causes stuttering”*** (p. 1).

(Stuttering Foundation of America, May 10, 2002). Frequently Asked Questions about Stuttering. From website: www.206.104.238.56/faq.htm, p.1-2.

- We know that children who stutter are no more likely to have psychological problems than children who do not stutter. In general there is no reason to believe that emotional trauma causes stuttering (p. 4-5).

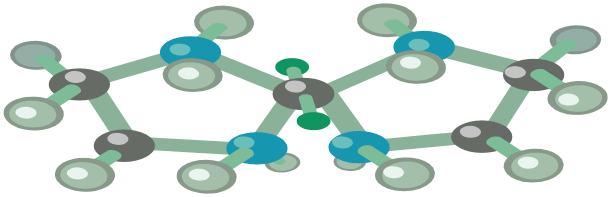
American Speech-Language Hearing Association (May 10, 2002). Stuttering. From website: www.asha.org/speech/disabilities/stuttering.cfm , p. 1-5.

Stuttering

- The ***SPEECH 1 GENE*** on chromosome 7
- Genes on chromosome 18 and 13 appear to be involved in some forms of stuttering.

Drayna, D. (May 10, 2002). Recent Developments Highlight Genetic Causes in Speech Disorders. From Stuttering Foundation of America website: www.206.104.238.56/Researchdrayna2.htm.

Drayna, D. (Fall, 2003). Scientists Find Gene that Predisposes Individuals to Stuttering. Stuttering Foundation Newsletter. From website: www.stutteringhelp.org.



Stuttering

- "…to produce speech, the brain must generate sets of neural commands to produce the right amount and timing of muscle activity in a large number of muscles, including those that control breathing, voice and oral movements. During disfluent speech of children and adults who stutter, it is clear that the brain does not accomplish this. Our research … suggests that, although stuttering is expressed as a failure of the motor areas of the brain…"

Stuttering

- "… to generate the right muscle commands for speech to proceed, the explanation of why this happens involves the interaction of the brain's motor areas with other brain systems, including those involved in emotional, cognitive, and linguistic processing…the motor areas of the brain cannot perform as well in generating muscle commands" (p. 1).

Smith, A. (September 30, 2003). Research Studies Interaction of Language and Motor Processing in Stuttering. Stuttering foundation of America; From website: www.stutteringhelp.org/Research/asmith.htm.

Stuttering

- The severity of stuttering lessens with time in those who suffer with it.
- But, they will continue to stutter with increased speech demands.

Smith, A. (September 30, 2003). Research Studies Interaction of Language and Motor Processing in Stuttering. Stuttering foundation of America; From website: www.stutteringhelp.org/Research/asmith.htm.

- The ratio is 4 to 1 in favor of males.

Riley, G. (May 10, 2002). Medical Aspects of StutteringFrom Stuttering Foundation of America website: www.206.104.56/Research/olanzapn.htm, pp.1-4.

Stuttering

- PET scans of stutters indicate low activity in Broca's area and the striatum. Other studies show these areas have elevated dopamine levels.

Yeoman, B. (November/December, 1998). Wrestling with Words. Psychology Today. Reprinted on website: www.Mankato.msus.edu/dept/comdis/kluster/infodstuttering/yeoman.html, p. 1-7.

- Stuttering shares much commonality with Tourette's Syndrome: both wax and wane, both worsen with anxiety, both are caused by excess dopamine in the striatum/basal ganglia.

Riley, G. (May 10, 2002). Medical Aspects of StutteringFrom Stuttering Foundation of America website: www.206.104.56/Research/olanzapn.htm, pp.1-4.

Stuttering

- Stutterers may have flawed sound processing in the left hemisphere's Wernicke's area. In non-stutters this area givesus feedback on whether their spoken words are correct. Stutterers may not be able to hear their spoken words accurately
- Also the nerve fibers in the lower part of the speech cortex of stutters appear to be altered.

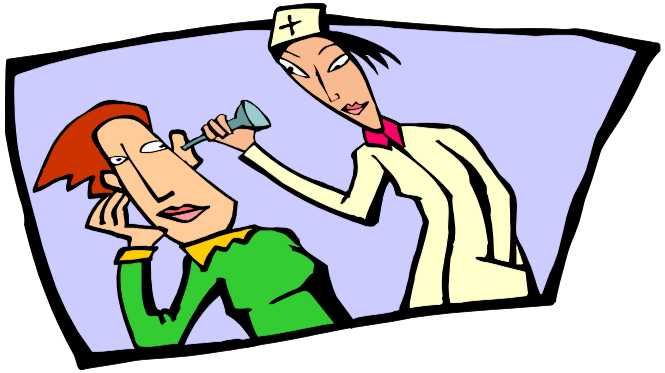
Neumann, K. (October/November 2006). Verbal Bottleneck. Scientific American: Mind, 17 (3), pp. 50-55.

Stuttering

- Adults with Persistent Developmental Stuttering (PDS) have significantly different volumetric MRI scans in right and left planum temporale and unique gyrification patterns. There are also anomolies in the perisylvian areas.
- Men and women may have gender specific differences.
- There may be differences between right and left handed stutters.

Foundas, A.L. (September 30, 2003). Are The Brains of People Who Stutter Different? Stuttering Foundation of America website: www.stutteringhelp.org/Research/foundas.htm.

Diagnosis



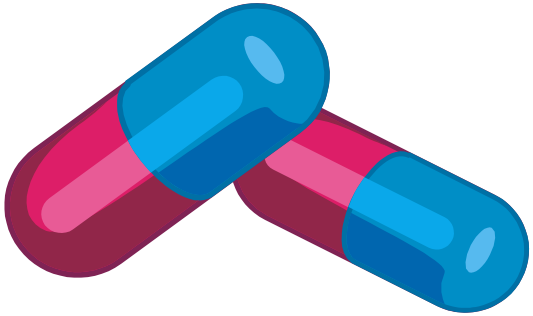
- “Stuttering is usually diagnosed by a speech-language pathologist, a professional who is specially trained to test and treat individuals with voice, speech and language disorders. The diagnosis is usually based on the history of the disorder, such as when it was first noticed and under what circumstances, as well as a complete evaluation of speech and language abilities” (p. 3).

National Institute of Deafness and Other Communication Disorders (May 10, 2002). Health Information: Stuttering. From website: www.nidcd.nih.gov/health/pubs_vs/stutter.htm. p. 1-6.

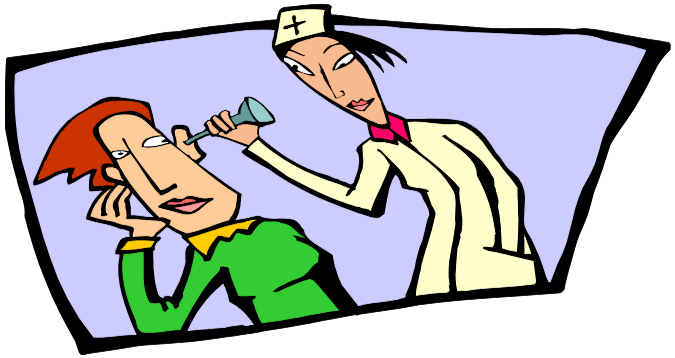
Stuttering

- Medications that can help:
  - Strattera has been found to significantly reduce Tics and Stuttering.

Ricardi, R. (February 17, 2004). Recognition, Diagnosis and Treatment of Adults with Attention-Deficit /Hyperactivity Disorder: Clinical Perspectives. Strattera Clinical Investigator, Pharmaceutical seminar sponsored by Eli Lily, Inc, Tucson, AZ.



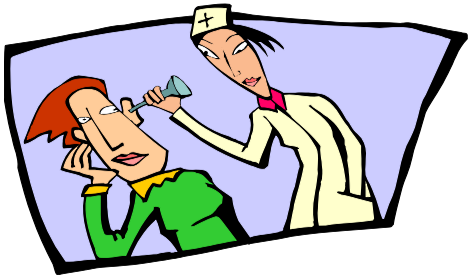
Treatment



- Currently there is no cure
- There are a variety of treatments. All help to some extent.
- Many programs focus on relearning how to speak.
- The emotional overlay should be addressed.
- Medications and electronic devices can be helpful to some extent.
- If the person struggles for 6 months get them help!

National Institute of Deafness and Other Communication Disorders (May 10, 2002). Health Information: Stuttering. From website: www.nidcd.nih.gov/health/pubs_vs/stutter.htm. p. 1-6.

Treatment

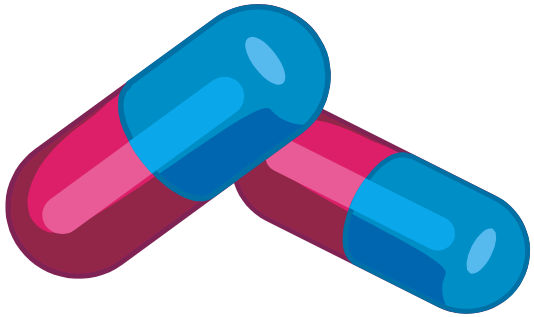


- Stuttering Modification Therapy: Stutterers are taught “Pseudostuttering”; They stutter on purpose which causes them to eventually no longer fear them.
- Fluency Shaping: First stutters are taught a new speech pattern, then they are taught stress timing, soft voicing, and how to have smooth transitions between sounds and breaths, then there is one year of intense follow-up. Two-thirds of patients respond even after 2 years of follow-up.
- Indirect Therapy: Parents are taught different ways to speak to their children who stutter. They speak slower with simpler sentence structures.

Neumann, K. (October/November 2006). Verbal Bottleneck. Scientific American: Mind, 17 (3), pp. 50-55.

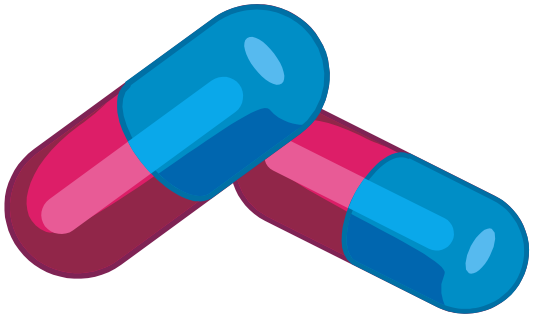
Stuttering

- Other Medications that can help:
  - Olanzapine/Zyprexa
  - Risperidone/Risperdal
  - Alprazolam/Xanax
  - Citalopram/Celexa
  - Clomipramine/Anafranil



Riley, G. (May 10, 2002). Medical Aspects of StutteringFrom Stuttering Foundation of America website: www.206.104.56/Research/olanzapn.htm, pp.1-4.

Stuttering



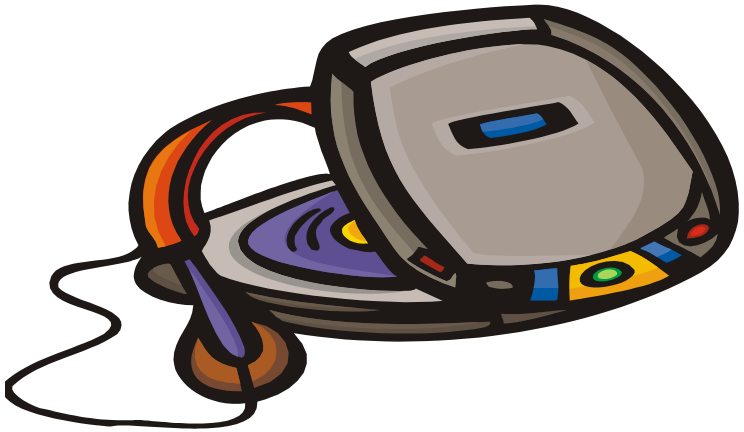
- “Riley wrote, “Even if some medications can be demonstrated to be useful in reducing the frequency and severity of stuttering, they will not provide total treatment. Rather, each person who stutters needs to work with a speech-language pathologist who specializes in stuttering to work out a comprehensive therapy program in which the use of a given medication may play a part” (p. 4)

Riley, G. (May 10, 2002). Medical Aspects of Stuttering From Stuttering Foundation of America website: www.206.104.56/Research/olanzapn.htm, pp.1-4.

Stuttering

- Delayed auditory feedback devices ***MAY*** be helpful for those with atypical right planum asymmetry, but the jury is still out on this.

From: www.stutteringhelp.org/whatsnew/dafsrch.htm, 9/30, 2003



Helpful Websites About Stuttering

- American Speech-Language Pathology Hearing Association (ASHA): www.asha.org
- American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS): www.entnet.org
- National Counsel on Stuttering: E-mail: cdugan@uic.edu
- National Stuttering Association: www.nsastutter.org
- Stuttering Foundation of America: www.stutter@stutterhelp.org

Helpful Websites About Stuttering

- International Stuttering Association (ISA): E-mail: stutter.isa@NewMail.net
- National Institute on Deafness and Other Communication Disorders (NIDCD): www.nidcd.nih.gov
- Plus, all the aforementioned mental health professional organizations.

Developmental Coordination Disorder

Balance and Coordination Disorders

- Children with Coordination Disorders tend to have:
  - Poor Social Competence
  - Low Self-Esteem
  - Reluctance to engage in Physical Activities

Fox, A.M. (Summer, 1998). Clumsiness In Childhood:Developmental Coordination Disorder. Learning Disabilities, 9 (2), pp. 57-64.

Developmental Coordination Disorder

- “I’ve always felt like a klutz. I’m not a good runner. I move quickly. I’m full of energy. But I’m not the most graceful person! Or if your talking sports, in grammar school, I got benched a lot because they didn’t want me for a team…Hitting the ball would be a fluke” (p. 150). –Hannah w/ NVLD
- Poor academics keep disabled children out of sports and clubs.

Wren, C. (2000). Hanging by a Twig. New York, NY: Norton.

Developmental Coordination Disorder

"Learning to ride a bike, play board games, cards, and sports are all supposed to be fun and a normal part of growing up, but they are difficult for anyone with a spatial learning disability. Being accepted is paramount to any fourth grader. I desperately wanted to do the same things I saw the other kids doing…" (Britt Neff, p. 42).

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

Manifestation of DCD

- Significant delays in motor milestones
- Poor sports performance
- Poor Handwriting
- Drop things often
- Clumsy

Harris, Z. (October 27, 2006). ADHD and DCD: The Double WHAMMY. Paper presented at the 18th Annual CHADD International Conference, Chicago. IL.

Developmental Coordination Disorder

- People with AD/HD may have a significantly reduced life expectancy due to an impulsive lack of concern for health related issues, exercise, diet, drugs, etc.

Barkley, R.A. (1998). Attention-Deficit Hyperactivity Disorder, Second Edition. New York, NY: Guilford.

Developmental Coordination Disorder

- “It is further suggested…that clinicians be aware of the larger realm of possible health-related difficulties that may arise in adults with ADHD and perhaps inquire about them as part of the initial evaluation” (p. 64).

Barkley, R.A., and Gordon, M. (2002). Research on Comorbidity, Adaptive Functioning, and Cognitive Impairments in Adults with ADHD: Implications for Clinical Practice. In S. Goldstein and A. T. Ellison (Eds.), Clinician’s Guide to Adult ADHD: Assessment and Intervention. New York, NY: Academic Press, pp. 43-69.

Developmental Coordination Disorder

- People with Asperger's Disorder often cannot relate to the feeling of satisfaction, etc. of being on a team.
- If they do participate in sports they will have a better chance in individual sports more often.

Attwood, T. (1998). Asperger's Syndrome: A Guide for Parents and Professionals. Philadelphia, PA: Jessica Kingsley, p. 103.

Developmental Coordination Disorder (DCD)

- These children have significant difficulty learning and internalizing tasks. It's not the timing of when they learn the tasks.

Fox, A.M. (Summer, 1998). Clumsiness In Childhood : Developmental Coordination Disorder. Learning Disabilities, 9 (2), pp. 57-64.

Subtypes of DCD

- Ideational Motor Planning
- Nonverbal Learning Disorders
- Proprioception and Kinesthetic Disorders
- Minimal Cerebral Palsy (CP)
  - 60% of children with CP outgrow their CP symptoms

Blondis, T.A. (October 18, 2002). FC1-The Association of Developmental Coordination Disorder (DCD) and AD/HD. Lecture presented at the 14th Annual CHADD Conference, Miami Beach, FL.

Comorbidity and DCD

- 80% of Dyslexics have coordination problems
- 55% of those with AD/HD have DCD
- Those with NVLD often have psychomotor problems on their body's left side.
- 50-90% of those with Asperger's Disorder have coordination problems

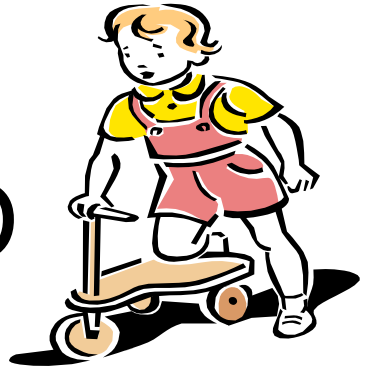
Fawcett, A.J., and Nicolson, R.I. (2001). The Role of the Cerebellum . In A. J. Fawcett (Ed.), Dyslexia: Theory and Good Practice. Philadelphia, PA: Whurr, pp. 89-106.

Gillberg, C. (2001). ADHD with Comorbid Developmental Coordination Disorder: Long-Term Outcome in a Community Sample. ADHD Report, 9 (2), pp. 5-9.

Wren, C. (2000). Hanging by a Twig. New York, NY: Norton, p, 150.

Attwood, T. (1998). Asperger's Syndrome: A Guide for Parents and Professionals. Philadelphia, PA: Jessica Kingsley, p. 103.

Treatment and DCD



- Children with DCD need to learn to verbally mediate to work around their coordination difficulties.
- Two large well designed Canadian studies have demonstrated Sensory Integration Training does not work. The same applies to the British “Kinesthetic Therapy”.

Blondis, T.A. (October 18, 2002). FC-1 The Association of Developmental Coordination Disorder (DCD) and AD/HD. Lecture presented at the 14th Annual CHADD International Conference, Miami, FL.

Treatment and DCD

- Other references on Sensory Integration Therapy and Sensory Integration Disorder:
  - Pallack, N. (2000) Keeping Current In Sensory Integration. CanChild (Centre for Childhood Disability Research), McMaster University. From Website: www.canchild.ca/default.aspx?tabid=128
  - Heilbroner, P.L. (2006). Why "Sensory Integration Disorder" Is a Dubious Diagnosis.

    From Website: www.quackwatch.org/01/QuackeryRelatedTopics/sid.html

Treatment of DCD

- 1994 International Consensus Meeting in Canada: Sensory Integration Disorder will be called "Developmental Coordination Disorder".
- ICD-10: "Specific Developmental Disorder of Motor Function"
- Sensory Integration Training is a "school of thought" among Occupational Therapists as are Developmental and Cognitive Theories.

Polatajko, H., Fox, M., Missiuna, C. (1995). National Perspective. Canadian Journal of Occupational Therapy, 1, pp.3-6.

Harris, Z. (October 27, 2006). ADHD and DCD: The Double WHAMMY. Paper presented at the 18th Annual CHADD International Conference, Chicago. IL.

Treatment and DCD

- “Acquired” AD/HD may respond better to Sensory Integration Training and Kinesthetic Therapy than “Genetic” AD/HD.
- They may work better with Brain Damage than with Developmental Disorders.

Barkley, R.A. (2002). Mental and Medical Outcomes of AD/HD. Paper presented at the 14th Annual International Conference, October 17-19, 2002, Miami Beach, FL.

Treatment and DCD

- Cognitive Orientation to Occupational Performance (CO-OP):
  - Teaches cognitive strategies to overcome DCD
  - Hand over hand techniques
  - Repetition and corrective feedback

Fox, A. M. (Summer, 1998). Clumsiness in Childhood: Developmental Coordination Disorder. Learning Disabilities, 9 (2), pp. 57-64.

Smith, I. (2000). Motor Functioning and Asperger's Syndrome. In A. Klin, F. Volkmar, and S.S. Sparrow (Eds.), Asperger's Syndrome. New York, NY: Guilford, pp. 97-124.

Possible Alternative Treatment of DCD

- Double Blind study of children with DCD treatment group given 6 capsules of 80% fish oil and 20% oil of rose pemrose. After 3 months little improvement in motor but much better academic functioning (10.9 months in reading and spelling 5.3 months) and AD/HD-like symptoms. ***Replication needed & more research needed!***

Richardson, A.J., and Montgomery, P. (May 2005) Pediatrics. 115, pp. 1360-1366.

Ingersoll, B. (October 26, 2006). Complimentry Treatments for AD/HD. Paper Presented at 18th Annual CHADD International Conference, Chicago, IL.

DCD and Helpful Professionals

- American Occupational Therapy Association: www.aota.org
- American Physical Therapy Association: www.apta.org
- American Speech-Language Therapy Association: www.professional.asha.org
- Behavioral Neurologists: www.anpaoline.org
- Mental Health Professionals
- Neuro-Ophthamologists: www.ama-assn.org

Developmental Coordination Disorder (DCD) and Balance

DCD and Balance

- Children with DCD have poor muscle tone and need to develop strength.
- Dyslexics have trouble with balance & motor skills, processing speed and working memory, especially with competing tasks.

Blondis, T.A. (October 18, 2002). FC-1 The Association of Developmental Coordination Disorder (DCD) and ADHD. Lecture presented at the 14th Annual CHADD International Conference, Miami Beach, FL.

Fawcett, A. (2001). Dyslexia: Theory and Good Practice. Philadelphia, PA: Whurr.

DCD and Balance

- Dyslexics have abnormal postural reflexes and reflexes in general.
- These abnormalities can cause problems with riding a bike, skipping, hopping, throwing and catching a ball, swimming, fine motor skills, etc.

Goddard Blythe, S. (April, 2001). Neurological Dysfunction as a Significant Factor in Children Diagnosed with Dyslexia. Paper presented at the British Dyslexia Association 5th Annual Conference, University of York, England.

DCD and Balance

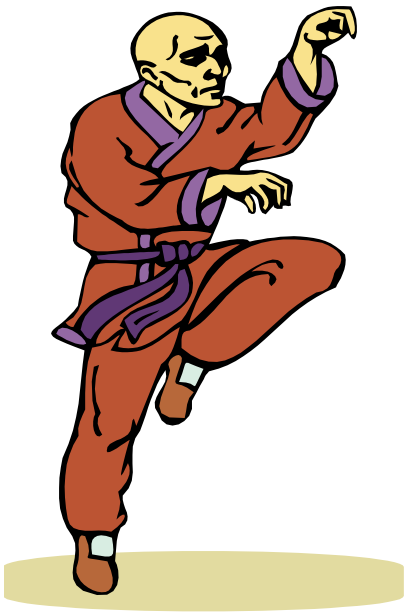
- Body Core=Trunk and Pelvis…provides the body “breaks” to slow down movement
- Legs and arms as well as muscles attach to spine and torso. The spine and torso provide a base.
- The body core is also the body’s center of gravity.

(September 23, 2003). Strength Training and Stability. From website: http://www.benning.army.mil/usapfs/Training/Strength/

DCD and Balance

- NIH Study of ***T'ai Chi Chuan***
  - – Improved balance in older adults by 50%

Hain, T.C., Fuller, L. . Weil, L. , & Kotsias, J. (1999). Effects of Tai Chi on Balance. 125, pp. 1191-1195.



DCD and Balance

- Nowicki and Duke spoke of “Resting Posture” which is the posture one assumes when one is not feeling anything of note and is in a neutral position. Those with Expressive Dyssemia tend to use Resting Posture inappropriately.
- This may also be caused by poor core body strength.

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

DCD and Balance

- Treatment:
  - Core strength and control can be developed by balance and stabilization training.

    (September 23, 2003). Strength Training and Stability. From website: http://www.benning.army.mil/usapf/Training/Strength
  - American Physical Therapy Association: www.apta.org
  - American Occupational Therapy Association: www.aota.org
  - American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS): www.entnet.org

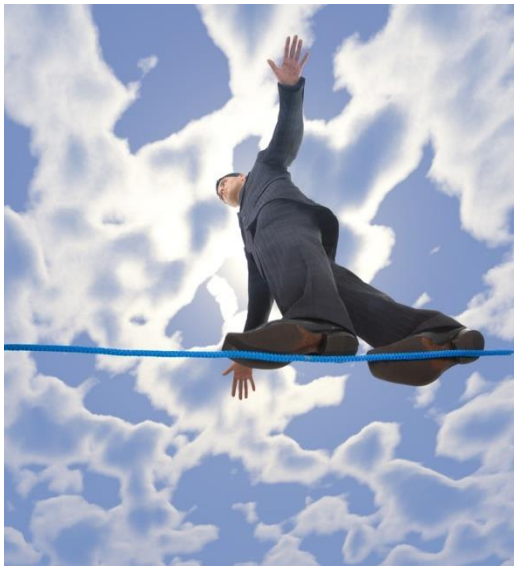
DCD and Balance

- ***Possible Alternative Treatment***
  - **NIH Emory University video tape:**
    Dr. Xu's Tai Chi Research Center
    P.O. Box 98426
    Atlanta, GA 30359

More Research Needed!

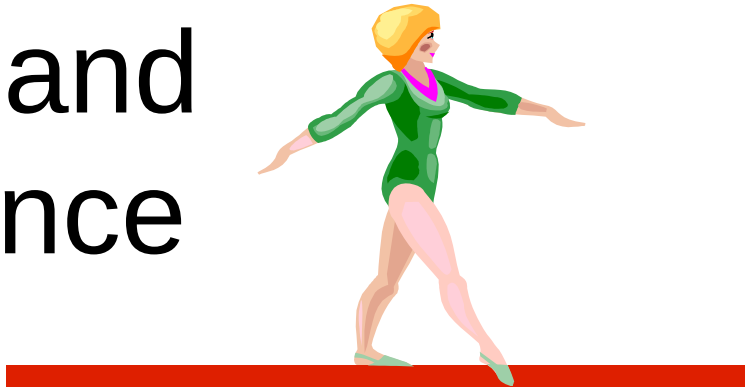
Possible Alternative Treatment for Balance Problems

- Power Plate
  - Developed for Russian Mir Space Station Cosmonauts
  - Said to treat osteoporosis & balance problems
  - ***More research needed!***



From Website: www.powerplateUSA.com
Image From Website:
www.costco/browse/product.aspx?Prodid=1100564&whse=&Browse=

DCD and Balance



- ***Alternative Therapy:***
  - Neuro-Developmental Delay and its treatment.
  - Institute for Neuro-Physiological Psychology (INPP)
  - Primitive Reflexes
  - Peter Blythe and Sally Goddard Blythe
  - ***No Research indicates this is true!***

Goddard, S. (2002). Reflexes, Learning and Behavior: A Window into The Child's Mind. Fern Ridge Press.

Hyperacusis

Hyperacusis

- A condition marked by super sensitive hearing.
- Often environmental sounds are so loud to them it is painful.

Edelson, S. (1994 Spring). Your Questions Answered. Perspectives of the Orton Dyslexia Society, 20 (2), p. 7.

Hyperacusis

- There are four types of these extreme sensitivities to sound:
  - "Hyperacusis" which can affect those of all ages and is usually associated with tennitus. They have hearing losses.

The Hyperacusis Network (No Date). Hyperacusis: Available from: 444 Edgewood Drive, Green Bay, WI 54302; web- dmalcore@mail.wiscnet.net

The Hyperacusis Network (No Date). Hyperacusis: Available from: 444 Edgewood Drive, Green Bay, WI 54302; web- dmalcore@mail.wiscnet.net

  - "Painful Hearing" in which certain frequencies are perceived as painful. Those with Developmental Disorders often have these problems. Approximately 40% of those with Autism and 95% of those with William's Syndrome have this.

Edelson, S. (1994 Spring). Your Questions Answered. Perspectives of the Orton Dyslexia Society, 20 (2), p. 7.

Hyperacusis- Types (Continued)

- “Super Hearing” occurs when individuals who can hear sounds extremely well, but it’s not physically painful.

  Edelson, S. (1994 Spring). Your Questions Answered. Perspectives of the Orton Dyslexia Society, 20 (2), p. 7.

- “Recruitment” these are people who have hyperacusis symptoms but have no hearing loss. This must be documented by an audiogram.

  The Hyperacusis Network (No Date). Hyperacusis: Available from: 444 Edgewood Drive, Green Bay, WI 54302; web-dmalcore@mail.wiscnet.net

Hyperacusis

- Poll of 65 AD/HD adults:
  - 50% reported hypersensitive hearing

Johnson, M.J. (1998) Having ADD and Being Hypersensitive: Is There A Connection?. From website:http://www.add.org/articles/hypersen.html

Hyperacusis

- People with Asperger's Disorder report the following types of Hyperacusis:
  - Sharp unexpected noises
  - High pitched continuous noise…i.e. small electric motors, etc.
  - Confusing complex or multiple sounds-shopping malls

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

Hyperacusis

- Best guess is that 1% of the population has hyperacusis.

The Hyperacusis Network (No Date). Hyperacusis: Available from: 444 Edgewood Drive, Green Bay, WI 54302; web-dmalcore@mail.wiscnet.net

Hyperacusis: Diagnosis and Treatment

- No test for Hyperacusis
- Go to speech and language clinics at major universities and/or medical centers (i.e. UCLA, Harvard, Mayo Clinic, etc.).
- People with Hyperacusis may have problems with sleep:
  - Try ear plugs, sound suppression technology, sleep hygiene, sleep medications, etc.

The Hyperacusis Network (No Date). Hyperacusis: Available from: 444 Edgewood Drive, Green Bay, WI 54302; web- dmalcore@mail.wiscnet.net

Controversial Hyperacusis Treatment

- Auditory Integration Therapy (Tomatis)
  - Developed by Guy Bernard of France
  - Listen to specially modulated music for 10 hours
  - ***MAY*** help somewhat, but ***no research exists to indicate its helpful and it costs a lot.***

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

  - Some believe this allows the cortex to reorganize and strengthens the muscles in the ear, but no research proves this.

Silver, L. B. (2001). Theme Editor's Note. Perspectives, 27 (3), 5.

Sinha, Y., Silove, N., Wheeler, D., Williams, K. (2004). Auditory Integration Training and other Sound Therapies For Autism Spectrum Disorders (Cochrane Review, Abstract). The Cochrane Library, 2, from:www.cochrane.org/cochrane/revabstr/AB003681.htm

Helpful Websites about Hyperacusis

- The Hyperacusis Network: dmalcore@mail.wisc.net
- www.ldonline.org
- National Institute on Deafness and Other Communication Disorders: nidcdinfo@nidcd.nih.gov
- American Academy of Audiology: www.audiology.org
- American Speech-Language Hearing Association: www.asha.org

Helpful Websites about Hyperacusis (Continued)

- American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS): www.entnet.org
- National Coalition for Auditory Processing Disorders: www.ncapd.org

Classroom Acoustics

- The American Speech-Language Hearing Association (www.asha.org) has a position paper on this that includes a comprehensive bibliography: Paper number 37, supplement 14.
- The Counsel of Educational Facility Planners International (CEFPI) has the following article on there website about how to build in good classroom acoustics:
- Erdreich, J. (July, 1999). Teaching in the Dark. Brief on Educational Facilities.

Tactile Sensitivities: LD and AD/HD

Tactile Sensitivities

- *"Tactile perception* is obtained through the sense of touch via the fingers and skin surfaces. The ability to recognize an object by touching it, to identify a numeral that is drawn on one's back or arm, to discriminate between smooth and rough surfaces, and to identify which finger is being touched (with eyes closed or while bind folded-sic) are all examples of tactile perception" (Lerner, 1997, p. 337).

Lerner, J. (1997). Learning Disabilities: Theories, Diagnosis and Teaching Strategies, 7th Edition. Boston, MA: Houghton Mofflin.

Tactile Defensiveness

- Silver wrote of LD and/or AD/HD individuals who have problems with tactile defensiveness. From early childhood many of these people do not like to be touched. They did not cuddle as a child, may complain about labels in clothing and only respond to deep touch. In some light touch may cause feeling of fear or anger.

Silver, L. (1992). The Misunderstood Child: Guide for Parents of Children with Learning Disabilities, 2nd Edition. Blue Ridge Summit, PA: Tab books.

Tactile Defensiveness

- Roffman wrote, “ Individuals with problems in this area may use either too light or too tight a grip when they shake hands with others. They may also be hypersensitive to touch (p. 16). Roffman continued that such problems in a child can lead to problems in parental bonding, problems in getting a haircut and workplace problems in adulthood.

Roffman, A.J. (2000). Meeting The Challenge of Learning Disabilities In Adulthood. Baltimore, MD: Brookes.

Tactile Defensiveness

- Poll Of 65 AD/HD adults:
  - 67% sensitive skin
  - 56% sensitivity to heat and cold
  - 44% sensitivity to clothing (tags, elastic, etc.)
  - 22% sensitivity to being touched

Johnson, M.J. (1998) Having ADD and Being Hypersensitive: Is There A Connection?. From website:http://www.add.org/articles/hypersen.html

Tactile Defensiveness

"Asperger reported primarily on hypersensitive behaviors. Those who are hypersensitive feel actual physical discomfort when coming into contact with someone or something the rest of us are barely aware of" (p. 23).

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

Tactile Defensiveness

"Particular parts of the body appear to be more sensitive, namely the scalp, upper arm and palms…The child may hate handling certain textures, such as finger paints or playdough. There can also be reluctance to wear a variety of clothing…" (p. 134).

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

Tactile Defensiveness

"Children who suffer from touch deprivation need more body contact. Methods of sensory motor therapy used by Occupational therapists for tactile defensiveness include touching and rubbing the skin surfaces, using lotions, and brushing skin surfaces" (p. 325).

Lerner, J. (1997). Learning Disabilities: Theories, Diagnosis and Teaching Strategies, 7th Edition. Boston, MA: Houghton Mofflin.

Tactile Defensiveness

"Despite frequent anecdotal accounts from both professionals and parents that SI (sic. Sensory Integration Therapy) therapy can improve behavior and functioning, there is little scientific validation for this technique as yet. In fact, some studies have shown that SI interventions are no better than more traditional therapies…You may want to try them out, but as with all treatments…especially those for which there is little research support…"

Tactile Defensiveness (Continued)

"…be skeptical and carefully assess the benefits you see" (p. 102).

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

Temple Grandin, Ph.D.'s Squeeze Machine

- Therafin Corporation
  19747 Wolf Road
  Mokena, IL 60448
  www.therafin.com/squeezemachine.htm
  Info@therafin.com
  800-843-7234
- ***More research is needed!***

Grandin, T (1992). Calming Effects of Deep Touch Pressure in Patients with Autism, College Students, and Animals. Journal of Child and Adolescent Psychopharmocloogy, 1 (2). From website: www.grandin.com/inc/squeeze.html

Adult Physical Intimacy and Tactile Defensiveness

- Sensate Focus (Masters and Johnson, 1970)
- Poor knowledge of human sexuality (Cruickshank, 1984)
- American Association of Sex Educators Counselors and Therapists (AASECT): www.aasect.org

Masters, W. H. and Johnson, V.E. (1970). Human Sexual Intimacy. Boston, MA: Brown Little and Company.

Cruickshank, W.M. (1984). LD and the Lifespan. Seminar presented at the Association for Children with Learning Disabilities (ACLD) conference, New Orleans, LA.

Adult Physical Intimacy and Tactile Defensiveness

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

Adult Tactile Defensiveness

- Willey (1999) an adult with Asperger's Disorder made the following suggestions for what she called "Tactile Sensitivity":
  - "If you dislike being touched, politely ask those around you to warn you before they touch you or ask them not to touch you at all. If you decide someone can touch you, let them know which you prefer, light or firm pressure.

Adult Tactile Defensiveness

- Willey Continued:
  - If even the slightest sensation aggravates your nerves, try to move your work, study and other personal spaces as far away as you can from air vent currents, window treatments and other obstacles that might inadvertently brush against your body.
  - If you enjoy the sensation of deep pressure, you might put weights…in the pockets of jackets…" (p. 155-156).

Willey, H.L. (1999). Pretending to be Normal: Living with Asperger Syndrome. Philadelphia, PA: Jessica Kingsley.

Adult Tactile Defensiveness

- Willey Also Suggested:
  - Get every garment made of materials that feel good.
  - Cut hair short if you cannot stand to wash your hair.
  - If you need to chew do so on paraffin wax, rubber tubing, gum or plastic straws.
  - Use squeeze balls for motor restlessness.
  - Bathing with brushes and scrubbing lightly or firmly

Willey, H.L. (1999). Pretending to be Normal: Living with Asperger Syndrome. Philadelphia, PA: Jessica Kingsley.

Tactile Defensiveness

- Helpful Profession:
  - American Occupational Therapy Association: www.aota.org

Tactile Defensiveness

- Other Helpful Websites:
  - www.hyperlexia.org
  - www.ldonline
  - www.asperger.org
  - www.udel.edu/bkirby/asperger/
  - www.sinetwork.org/index.htm

Tactile Defensiveness

- Good Resource:

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

Synesthesia, Learning Disorders and AD/HD

What is a Synesthesia?

"This is a rare condition that is not unique to people with Asperger's Syndrome (LD and/or AD/HD-sic). The person experiences sensation in one sensory system and as result experiences a sensation in another modality. The most common expression is seeing colors every time the person hears a particular sound. This is called colored hearing" (p. 138).

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

Synesthesia

"This cross-modal sensation is reproducible in a given individual during their lifetime, so that a given sound or word always leads to perception of the same color. Because of its curious phenomenology and its failure, usually to lead to significant problems in daily living, its existence has appeared hidden from medicine, including neuroscience, for the latter part of the century" (p. X).

Cole (1993). Forward. In R. Cytowic (Author), The Man Who Tasted Shapes: A Bizarre Medical Mystery Offers Revolutionary Insights Into Reasoning, Emotion, and Consciousness. New York, NY: Putman.

Synesthesia

“’Oh Dear’, he said (Michael), slurping a spoonful, ‘there aren’t enough points on the chicken’”(p.3). Michael continued, “’You’re a neurologist, maybe it will make sense to you I know it sounds crazy, but I have this thing, see, where I taste by shape’”(p.4). Cytowic (1993) replied, ‘”Where do you feel these shapes?’” To which Michael replied, ‘”All over…but mostly I feel things rubbed against my face or sitting in my hands’” (p. 4).

Cytowic, R. (1993). The Man Who Tasted Shape: A Bizzare Medical Mystery Offers Revolutionary insights Into Reasoning, Emotion, and Consciousness. New York, NY: Puttman.

Synesthesia

- “The latest scientific studies have found that as many as one in 100 people is synaesthetic” (p. 2 of 3).
- Often they score in the Superior range on I.Q.
- They often are left handed, have left -right confusion, and are Dyscalculic.
- High rates of Dyslexia and Autism in relatives

Author (June 2008). Derek tastes of Earwax. BBC Science & Nature: TV and Radio Follow-up. From: http://www.bbc.co.uk/tvradio/programs/horizon/derek_qa.shtml

Carpenter, B. (March, 2001). Everyday Fantasia: The World of Synesthesia. Monitor On Psychology, 32 (3), pp. 26-29.

Cytowic, R. (1993). The Man Who Tasted Shape: A Bizzare Medical Mystery Offers Revolutionary insights Into Reasoning, Emotion, and Consciousness. New York, NY: Puttman.

Synesthesia

- They are probably inherited by one gene.
- There appears to be 6 women to every man who has one.

Cole, (1993) Forward. In Cytowic, R. (Author) R. The Man Who Tasted Shape: A Bizzare Medical Mystery Offers Revolutionary insights Into Reasoning, Emotion, and Consciousness. New York, NY: Puttman.

Synesthesia

- People with Synesthesias tend to be more creative than the general population:
  - They appear to have an exceptional ability to use metaphor.
  - Their brains seem to be set up to connect unrelated cognitions.

Ramachandran, V.S., and Hubbard, E. (May, 2003). Hearing Coulrs, Tasting Shapes: People With Synesthesia—Whose Senses Blend Together—Are Providing Important Cluesto Understanding the Organization and Functions of the Human Brain. Scientific American.com. From website: www.sciam.com/article.cfm?articleID=00030114B-9D06-1E8FA5809EFC5880000.

Synesthesia

"Using positron-emission tomography and functional magnetic imaging researchers have found that in synesthetes who report colored hearing, the visual area of the brain shows increased activation in response to sound. That isn't the case with nonsynesthetes. Other studies have demonstrated that synesthesic perception occurs involuntarily and interferes with ordinary perception" (p. 27).

Carpenter, B. (March, 2001). Everyday Fantasia: The World of Synesthesia. Monitor On Psychology, 32 (3), pp. 26-29.

Synesthesia

- “Studies have confirmed that the phenomena is biological and apparently unlearned, distinct from hallucination and metaphor” (. 27).

Carpenter, B. (March, 2001). Everyday Fantasia: The World of Synesthesia. Monitor On Psychology, 32 (3), pp. 26-29.

- “Cross wiring” in the fusiform gyrus and angular gyrus appear to be related to synesthesia.

Ramachandran, V.S., and Hubbard, E. (May, 2003). Hearing Coulrs, Tasting Shapes: People With Synesthesia—Whose Senses Blend Together—Are Providing Important Cluesto Understanding the Organization and Functions of the Human Brain. Scientific American.com. From website: www.sciam.com/article.cfm?articleID=00030114B-9D06-1E8FA5809EFC5880000.

Types of Synesthesia

- Colored hearing
- Phonism-other senses being heard
- Conceptual Synesthesia-Seeing time as symbol
- Synesthesialgia- Painful synesthesia: Deaf man who hears what he sees (Cytowic, 1993).
- LSD Induced
- Photographic memory
- Sensory deprivation induced

Types of Synesthesia

- Temporal lobe epilepsy induced
- There may be as many as 50 types of synestesias

Ramachandran, V.S., and Hubbard, E.M., (April 14, 2003). Hearing Colors, Tasting Shapes: Common Questions, Scientific American.com, from website: www.sciam.com/article.cfm?articleID=000C2CEC-A4FE-1E8F-8EA5809EC5880000 .

Not all Students Who get the Correct Math Answer but Cannot Show Their Work Are Cheating

- Some synaesthetes (60%) calculate by seeing numbers in space around them often in a number line.
- The correct answer just appears to them; they cannot explain why, or how it does. It just does.
- They are not cheating. Test and proctor them by themselves.

Author (June, 2008). Derek Tastes of Earwax. BBC-Home. Science and Nature Follow-up: http://www.bbc.co.uk/sn/tvradio/programmes/horizon/derek_qa.shtml

Synesthesia

- Because most humans engage in metaphoric thought and communication we all may have some synesthesic ability. Diagnosed synesthesias have an extreme form of this condition.

Ramachandran, V.S., and Hubbard, E. (May, 2003). Hearing Coulrs, Tasting Shapes: People With Synesthesia—Whose Senses Blend Together—Are Providing Important Cluesto Understanding the Organization and Functions of the Human Brain. Scientific American.com. From website: www.sciam.com/article.cfm?articleID=00030114B-9D06-1E8FA5809EFC5880000.

Diagnosing Synesthesias

- Synesthesia is involuntary, but must be elicited. External stimulus sets it off.
- Synesthesia is projected “The parallel sense that is triggering is usually outside the body rather ‘in the mind’s eye’s’. If visual, synesthesia is experienced close to the face” (p. 76).
- Synesthesic perceptions are durable, discrete, and generic.

Diagnosing Synesthesias (Continued)

- Synesthesia is Memorable. “The parallel sensations are vividly remembered, often in preference to the stimulus that triggered them” (p. 79).
- Synesthesia is emotional and noetic. “ Synesthetes have an unshakable conviction that what they preceive is real (p. 77).

Cytowic, R. (1993). The Man Who Tasted Shape: A Bizzare Medical Mystery Offers Revolutionary insights Into Reasoning, Emotion, and Consciousness. New York, NY: Puttman.

Treating Synesthesias

- Most synesthetes would not like to have their synesthesias removed.
- “At a practical level, many researchers observe, research on synesthesia will help raise the condition’s visibility, reducing the risk that clinicians might make it a sign of mental illness.

Carpenter, B. (March, 2001). Everyday Fantasia: The World of Synesthesia. Monitor On Psychology, 32 (3), pp. 26-29.

Treating Synesthesia

- A Referral to a ***Behavioral Neurologist/Neuropsychiatrist*** is recommended:
  - They specialize in the behavioral aspects of dementia and memory disorders, neurobiological disorders (i.e., dyslexia, AD/HD, etc.), how to use medications with such populations, as well as some neuropsychology and psychiatry.

www.anpaonline.org

Treating Synesthesia

- Caring for the emotional overlay:
  - American Psychiatric Association: www.apa@psych.org
  - American Psychological Association: www.apa.org
  - National Association of Social Workers: www.nasdc.org
  - National Board of Certified Counselors: www.nbcc@nbcc.org

Treating Synesthesialgia

- Seek out a world class pain control clinic:
- American Pain Society: www.info@ampainsoc.org

Treating Synesthesia

- American Synesthesia Association: www.web.mit.edu/synesthesia/www/synesthesia.html
- International Synesthesia Association: www.psychiatry.cam.ac.uk/isa/
- www.mixsig.net
- The Synesthesic Experience: www.web.mit.edu/synesthesia/www/