

# October 2016 Update

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# Specific Learning Disorder



# AD/HD, Dyslexia & Medication

**Yale scientists found when atomoxetine is used with children with dyslexia their decoding and reading comprehension significantly improved. Those with AD/HD and comorbid dyslexia had a significant improvement in phonological processing and in impulsivity/hyperactivity and inattention symptoms related to AD/HD. The AD/HD only group had significant changes in their AD/HD symptoms, but nothing related to reading.**

**Swaywitz, S. et al. (July13, 2016). Effect of Atomoxetine Treatment on Reading and Phonological Skills in Children with Dyslexia or Attention-Deficit/Hyperactivity Disorder and Comorbid Dyslexia in a Randomized, Placebo-Controlled Trial. [Journal of Child and Adolescent Psychopharmacology](https://doi.org/10.1089/cap.2015.0189). DOI: [10.1089/cap.2015.0189](https://doi.org/10.1089/cap.2015.0189).**

# ADHD

A photograph of a rocky cliff face with a cactus growing on it. The word 'ADHD' is overlaid in large yellow letters. The cliff is composed of dark, layered rock formations. A green cactus with several flat, paddle-shaped segments and small spines is growing from a crevice in the rock. The background shows some green foliage on the left side.

# Methylphenidate's Effects on the Brain

**Researchers recently found that methylphenidate increases the cerebral blood flow in 10 to 12 year old boys with AD/HD in their thalamus and striatum, but this was not the case in men ages 23 to 40 with AD/HD. They concluded the medication has an age dependent affect on the dopamine system.**

**Schrantee, A. et al. (September 1, 2016). Age-Dependent Effects of Methylphenidate on the Human Dopaminergic System in Young vs Adult Patients With Attention-Deficit/Hyperactivity Disorder: A Randomized Clinical Trial. JAMA Psychiatry. DOI: 10.1001/jamapsychiatry.2016.1572.**

# Medical Diseases in Adults with AD/HD

**Norwegian researchers reviewed the research concerning the comorbidity of adults with AD/HD and medical diseases. Although they found a paucity of well designed research studies they did conclude there was some modest evidence to suggest adults with AD/HD are more at risk of having sleep disorders, obesity, and asthma than their non-disabled peers. There might be some connection between migraines and celiac disease and AD/HD, too.**

**Telnes Instanes, J. et al. (September, 22, 2016). Adult ADHD and Comorbid Somatic Disease: A Systematic Literature Review. [Journal of Attention Disorders](https://doi.org/10.1177/1087054716669589). DOI: 10.1177/1087054716669589.**

# Sluggish Cognitive Tempo and Speed of Cognitive Performance

**American researchers found college students with self-reported sluggish cognitive tempo were not different from their non-impaired peers in processing speed, reading speed, and reading comprehension.**

**Wood, W.L.M. et al. (September 21, 2016). Sluggish Cognitive Tempo and Speed of Performance. Journal of Attention Disorders. DOI: 10.1177/1087054716666322.**

# Obsessive-Compulsive Disorder and AD/HD

**Turkish researchers found that adults with AD/HD and comorbid OCD had an earlier age of onset than OCD adults without AD/HD of their OCD symptoms. Hoarding, impulsivity, and obsessive symmetry symptoms strongly suggested comorbid AD/HD.**

**Kilic, S.M. et al (September 21, 2016). The Clinical Characteristics of ADHD and Obsessive-Compulsive Disorder Comorbidity. Journal of Attention Disorders. DOI: 10.1177/1087054716669226.**



# AD/HD and Celiac Disease

**Slovenian scientists found AD/HD Children and adolescents were not at a higher risk of having celiac disease than their non-impaired peers. They found no evidence that a gluten free diet would help with AD/HD symptoms.**

**Kumperscak, H.G. et al (September 19, 2016). Prevalence of Celiac Disease Is Not Increased in ADHD Sample. Journal of Attention Disorders. DOI: 10.1177/1087054716666953.**

# Occupational Therapy and AD/HD

**Israeli researchers found that functional-cognitive occupational therapy used with children who had AD/HD were said to have significant improvements in their quality of life by their parents, but not their teachers. The effects were moderate and not effected by medication.**

**Hahn-Markowitz, J. et al. (September 16, 2016). Efficacy of Cognitive-Functional (Cog-Fun) Occupational Therapy Intervention Among Children With ADHD An RCT. Journal of Attention Disorders. DOI: 10.1177/1087054716666955.**

# Teachers, AD/HD, and Autism Symptoms

**Australian scientists reported they found teachers rated children with AD/HD as having more symptoms related to autism spectrum disorder if they had disruptive classroom behaviors.**

**Clayton D. et al. (September 15, 2016). Association Between Teacher-Reported Symptoms of Autism Spectrum Disorder and Child Functioning in Children With ADHD. Journal of Attention Disorders. DOI: 10.1177/1087054716669227.**

# Depression and Quality of Life in AD/HD Adults

**German scientists found that adults with AD/HD had more traumatic events and abuse growing up as well as depressive symptoms as adults than their non-AD/HD peers. AD/HD adults have more depression and a lower quality of life than non-AD/HD peers.**

**Matties, S. et al (September 2, 2016). The Impact of Depressive Symptoms and Traumatic Experiences on Quality of Life in Adults With ADHD. Journal of Attention Disorders. DOI: 10.1177/1087054716654568.**

# Autism

# Autism and Health Care

**American researchers investigated the barriers adults with autism spectrum disorder have when it comes to health care compared to their non-disabled peers. They found that anxiety was the major barrier followed by, not being able to process information fast enough, sensory problems caused by the hospital environment, and difficulty with communication.**

**Raymaker, D.M. et al. (September 22, 2016). Barriers to healthcare: Instrument development and comparison between autistic adults and adults with and without other disabilities. Autism. DOI: 10.1177/1362361316661261.**

# Neurofibromatosis Type 1 & Autism

**Research done at the Centers for Disease Control and Prevention indicated children with autism have 5 times the rate of Neurofibromatosis type 1 than their non-impaired peers.**

**Bilder, D.A. et al. (October, 2016). Brief Report: The Prevalence of Neurofibromatosis Type 1 among Children with Autism Spectrum Disorder Identified by the Autism and Developmental Disabilities Monitoring Network. *Journal of Autism and Developmental Disorders*. 46(10), 3369-3374.**

# Autism, AD/HD and Executive Function

**Australian researchers compared the executive function profiles of children with AD/HD and Children with AD/HD and Autism Spectrum Disorder. They found lower-order cognitive abilities contributed significantly to executive function and that there was no difference between both groups in terms of executive function. They also found hyperactivity was not related to executive function.**

**Neely, R.J. et al. (October, 2016). Relationship Between Executive Functioning and Symptoms of Attention-Deficit/Hyperactivity Disorder and Autism Spectrum Disorder in 6–8 Year Old Children. Journal of Autism and Developmental Disorders. 46(10), 3270-3280.**



# Autism and Sexuality

**British scientists investigated the experiences of young adults with and without autism taking a sex education course. They found the feeling of the two groups did not differ, but there was a significant difference between their sexual awareness. Those with autism were found to have significantly more negative experiences during the sex ed course, they felt more vulnerable, they were more confused about sex, and they had much more social anxiety than their non-impaired peers. This was determined by interviews with the subjects.**

**Hannah, L.A. et al. (September 16, 2016). Experiences of Sex Education and Sexual Awareness in Young Adults with Autism Spectrum Disorder. Journal of Autism and Developmental Disorders. DOI: 10.1007/s10803-016-2906-2.**

# Miscellaneous



# Mechanosensation & Proprioception

- **Mechanosensation is the ability to sense force. It is important for socialization, knowing how hard to caress and is needed for coordination.**
- **Proprioception allows you to feel your body in space, to control your movements and to maintain your posture.**

Alexander, C.T. et al. (September 21, 2016). The Role of *PIEZO2* in Human Mechanosensation. New England Journal of Medicine. DOI: 10.1056/NEJMoa1602812.

# Developmental Disorder of Mechanosensation and Proprioception

Two patients were found by National Institutes of Health researchers to have a developmental disorder of mechanosensation and proprioception. One child and one college student were found to have a rare genetic mutation in the *PIEZO2* gene. The child had a very limited sense of proprioception and as a result she did not crawl until 18 months of age, she had great difficulty with posture and she could barely walk. The college student could walk well if she could see herself walk, but not when her eyes were covered. In fact she would immediately lose control of her body and fall. Neither one ever ran or jumped. The *PIEZO2* gene variation appears to explain these symptoms.

Hamilton, J. (September 21, 2016). How A 'Sixth Sense' Helps Simone Biles Fly, And The Rest Of Us Walk. National Public Radio. All Things Considered. From website:

<http://www.npr.org/sections/health-shots/2016/09/21/494887467/how-a-sixth-sense-helps-simone-biles-fly-and-the-rest-of-us-walk>.

Alexander, C.T. et al. (September 21, 2016). The Role of *PIEZO2* in Human Mechanosensation. New England Journal of Medicine. DOI: 10.1056/NEJMoa1602812.

# Mr. Waterman's Lost 6th Sense



- What is our 6th sense?
- Proprioception
- Mr. Waterman lost his proprioception due to encephalitis.
- “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>

