November, 2016
Updates

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

2016 10 20
AD/HD
AD/HD in the U.S. Military

A recent study of U.S. Military members found that 7 to 9 percent of active duty service members of all ages have AD/HD. This was not expected in the older age groups to be such a high number.

Adult AD/HD, Cognitive Behavioral Therapy, and Medication

A group of Canadian and American scientists found that cognitive behavioral therapy (CBT) and medication controlled AD/HD symptoms in adults better than CBT alone. This included AD/HD symptoms, organizational abilities and self-esteem. However, over time the improvement over CBT alone was not as great.

AD/HD and Medication

“A plethora of studies attest to the effectiveness of stimulants in improving AD/HD symptomatology...as well as the safety of these medications when taken as prescribed...As with all medications, side effects exist, however, and may include sleep difficulties, reduced appetite, nausea, abdominal pain, headache, and cardiac symptoms” (p. 1).

Gyda, B. et al. (September, 2016). Prescription Stimulant Misuse: International Findings and Implications for Policy, Prevention, and Intervention. The ADHD Report, 24(6), 1-6.
Facts About Stimulant Misuse

- Males are more likely to misuse stimulant medication prescriptions than females.
- Especially anglo males who are in fraternities, with higher restlessness than the norm, more psychological symptoms, and lower GPAs.
- Stimulants are abused for neurocognitive and grade enhancement as well as for recreation.
- The US has the highest stimulant misuse rate in college than any other country.
- Island has the highest rate of methylphenidate prescriptions per capita in the world.

Gyda, B. et al. (September, 2016). Prescription Stimulant Misuse: International Findings and Implications for Policy, Prevention, and Intervention. The ADHD Report, 24(6), 1-6.
Late Onset Adult AD/HD?

Barkley believes the only kind of “adult onset AD/HD” is caused by brain injury during adulthood.

Autism Spectrum Disorder
Researchers from the University of Washington found that boys with autism spectrum disorder (ASD) who were exposed to three ultrasounds during their first trimester of gestation had significantly lower non-verbal IQ and more repetitive behaviors than boys with ASD who were not exposed to ultrasounds. The scientists believed this may demonstrate that ultrasound may exacerbate the symptoms of ASD in the children who are exposed to them. It may also cause multiple gene alterations.

Researchers from France and Sweden have found a possible gender bias towards diagnosing males with autism spectrum disorder in the Autism Diagnostic Interview-Revised. This they believe speaks to the need for the instrument to be renormed with male and female norms.

Another recent study of the Autism Spectrum Quotient Short Form found it did not have gender biased norms and could equally find females and males with the disorder.

Autism and Oculomotor Control

French scientists found that adults with autism have a problem with abnormal oculomotor control due to cerebellar anomalies and this points to some of their sensory motor issues.

Autism Gender Difference in Mentalizing

Australian researchers learned through fMRI imaging that males with autism mentalize with a hyperactivity in the bilateral temporal-parietal junction and females have a hyperactivity in their medial prefrontal cortex, precuneus and right temporal-parietal junction.

British researchers interested in the overlap of alexithymia and autism spectrum disorder found through skin concordance and self-report data of those with autism and those with alexithymia that both groups have a physiological disruption in the subjective experience of emotions. They suggested that mindfulness therapies may be able to help both groups learn to control anxiety and to tell the difference between a body sensation and emotion.

Video Facial expression Training & Autism

Israeli scientists used a Hebrew language translation of Simon Baron Cohen’s The Transporters facial expression training video with a group of high functioning ASD children and found it help them significantly with their emotional facial expression recognition. They did find there was a negative correlation of amount of improvement and amount of impairment, however. They also found that a non-English language translation of the video can work also.

American researchers found ASD adolescents who had more structured social activities in high school were able to transition easier to the more unstructured social environment after high school. They also found those who had more internalizing problems in high school need more structured social interaction to be able to make the transition to adult life.

Researchers recently found that children with autism have reduced GABA which causes them difficulty in behavioral inhibition and tactile information processing (i.e., tactile defensiveness).

Miscellaneous Update
Agoraphobia and Prey Animals

German researchers discovered the symptoms of agoraphobia in humans with high anxiety sensitivity have enhanced “thigmotaxis”, or the behavior prey animals display to protect themselves from predators when approaching a forest clearing. In most animals this is an evolutionary advantage and it serves to protect them.

All multicelld animals need sleep. When you are asleep your entire brain is not asleep. Similarly, when you are awake your entire brain is not awake. Individual cells and/or networks of cells can be asleep when you are awake and vice versa. Researchers from New Zealand found when people were given a 50 minute boring visual tracking task they would experience microsleeps that lasted ½ to 15 seconds during which they would close their eyes and not be responsive. They also would not remember these periods later. These microsleeps occurred only parts of the brain. Approximately, 70% of participants experienced these.


Scientists recently reviewed research literature investigating the use of sleep deprivation, changing sleep cycle and light therapy to treat major depressive disorder. They found these methods may be a viable alternative for those who do not respond to more traditional therapies.

Italian scientists discovered that heart rate increases and rapid eye movements controlled by the autonomic nervous system during sleep account for 73% improvement in associative learning over those who do not sleep.

Places to Find Apps for Those with Mental Health Concerns

- Northwestern University Center for Behavioral Intervention Technologies: [http://cbits.northwestern.edu/](http://cbits.northwestern.edu/)
- National Center for Telehealth and Technology: [http://t2health.dcoe.mil/](http://t2health.dcoe.mil/)
- Autism Speaks: [https://www.autismspeaks.org/autism-apps](https://www.autismspeaks.org/autism-apps)
- Anxiety and Depression Association of America Mobile App Clearinghouse: [https://www.adaa.org/finding-help/mobile-apps](https://www.adaa.org/finding-help/mobile-apps)
Bipolar Disorder and Uric Acid

Italian researchers discovered that patients with bipolar disorder have high uric acid levels. This may indicate that part of bipolar disorder is related to a metabolic dysfunction. Those with bipolar disorder tend to be males, with large waist size and high triglyceride levels. The researchers speculated that controlling uric acid may in part reduce manic symptoms.

Swedish research found that adults who had suffered a traumatic brain injury in childhood were 50% more likely to be admitted to a hospital for mental health disorders in adulthood than those that did not have such injuries. They were 70% more likely to die before age 41 and 60% more likely to be receiving government benefits than their non-injured peers.

How Your Heartbeat Regulates What You See

Swiss researchers found that internal feelings suppress visual stimuli when the heart rate increases. The insula is thought to be the part of the brain that processes internal feelings and brings them into self-awareness. These researchers found that it is sensitive to both internal feelings and external visual stimuli. When visual stimuli is presented in synchrony with one’s heartbeat it appears it becomes invisible by interocular masking.

Forgiveness and Health

Researchers from Stanford after doing research which included people in conflicts in Northern Ireland and Sierra Leone found that situation specific forgiveness, learning how to forgive in future similar situations, and having empathy for the transgressor reduced negative thoughts about the transgression, and increased positive thoughts. When paired with relaxation techniques it educed feelings of flight or flight and reduced cardiovascular load.

Every three years the Program for International Student Assessment (PISA) publishes achievement rates of school children around the world, and the US tends to be at the bottom in mathematics. The PISA has found three types of math learning styles:

1. Memorization
2. Trying to relate new math concepts to one’s already learned
3. Routine self-monitoring of one’s own understanding

US students tend to use memorization and they are taught to use memorization by their teachers. Children who use the memorization method are typically ½ year behind those who use the other methods in math achievement around the world. Researchers believe teaching number sense is very important.

They also believe that timed testing of math learning should not be done because it lowers achievement levels and increases math anxiety, particularly in girls. It also impairs memory recall.

New Synesthesia Data

Martha Zaraska (November/December, 2016) recently reported some research on synesthesia indicated it occurs in 1 in 23 people, that grapheme-color synesthesia is the most common, and there are somewhere between 60 and 150 types. They are believed to be caused due to neurological and immune system differences. True synesthesias appear to occur automatically, and the people with them tend to have significantly more neuroconnections between the sensory areas involved. There is evidence such people have more gray and white matter in those areas, too. If you have a person with a synesthesia in your family as many as 40% of your 1st and 2nd cousins will have one, also. There may be a “synesthesia genotype” which includes...
New Synesthesia Data

...parts of the second and sixteenth chromosomes which code for neuroconnectivity in the brain. Parts of chromosome two also codes for autism spectrum disorder (ASD) and those with ASD are three times more apt to have synesthesias than neurotypicals. People with multiple sclerosis are more likely to experience synesthesias as are those with migraines and irritable bowl syndrome. This may indicate there is a connection between the immune system and synesthesias. In infancy through childhood and adolescence the immune system controls the pruning of unused synapses. It may be those with synesthesias have immune systems that do not as efficiently prune unneeded connections, hence developing the condition.