




Theme: Neurodevelopment

 **Virtual reality air travel training with children on the Autism spectrum** (*Cyberpsychol Behav Soc Netw.* 2019 Jul 29. [Epub ahead of print])


Virtual reality-based treatment is gaining fast popularity among children with neurodevelopmental disorders (NDD). It provides an environment that is safe and controllable, where children can be trained to practice various skills repeatedly. Challenging tasks of daily living for children with NDD like driving, playing an outdoor game, and shopping in the market can be improved using this intervention. In this exciting report, the authors trained five children with autism on air travel using iPhone X and google cardboard device once weekly for three weeks. On the fourth week, children could navigate through the real world airport under their power. This report intends to bring attention to the growing use of virtual reality in improving the quality of life among children with neurodevelopmental disorders.

 **Peripheral mitochondrial DNA copy number is increased in Korean Attention-deficit hyperactivity disorder patients** (*Front Psychiatry.* 2019;10:506)


Authors found that mitochondrial DNA copy numbers were significantly higher among 70 patients with Attention deficit hyperactivity disorder (ADHD) when compared to age-matched controls. Similarly, mtDNA methylation ratio of *PPARGC1A* was decreased among ADHD patients when compared to healthy controls. Mitochondrial DNA methylation has a crucial role in mitochondrial gene regulation. This study provides a novel insight into the possible role of mitochondrial dysfunction in the pathophysiology of ADHD.

 **Telomere length and ADHD symptoms in young adults** (*J Atten Disord.* 2019 Aug 2:1087054719865776).


Short telomere length has been linked to accelerated aging affecting organs with high cell turnovers like skin, bone marrow, lungs, and gastrointestinal tract. There is a growing number of reports that associate short telomere syndromes to neurocognitive impairment. In the present study, the authors explored the association of telomere length among young adults to their childhood symptoms of hyperactivity-impulsivity. DNA samples of subjects with Attention deficit hyperactivity disorder (ADHD) and controls were processed for telomere length. Contrary to the hypothesis, the authors found a significant association between childhood symptoms of hyperactivity-impulsivity symptoms with longer telomere length. This preliminary study showed lack of association between telomere length and adulthood symptoms of ADHD.

 **Exome sequencing as a clinical diagnostic test for individuals with neurodevelopmental disorders** (*Genet Med.* 2019 Jun 11. [Epub ahead of print])

A meta-analysis was performed on a total of 30 studies retrieved on the yield of molecular diagnostic testing among children with the neurodevelopmental disorder (NDD) with or without associated conditions. The findings suggested that the yield of clinical exome sequencing was 36% compared to the previous report showing 15-20% yield of the chromosomal microarray. The diagnostic yield of exome sequencing improves from 36% among children with isolated NDD to 53% among those with NDD and other associated conditions. The present meta-analysis concluded that exome sequencing must be considered as the first-tier clinical diagnostic test for individuals with unexplained neurodevelopmental disorders.

 **Prenatal maternal stress and risk of neurodevelopmental disorders in the offspring** (*Soc Psychiatry Psychiatr Epidemiol.* 2019 Jul 20. [Epub ahead of print])

This systematic review intended to analyze the association of prenatal stress and neurodevelopmental disorder in the offspring. Authors found that despite an extensive heterogeneity of the study designs, prenatal stress was significantly associated with increased risk of both autism spectrum disorder (pooled OR 1.64; 95% CI 1.15-2.34) and attention deficit hyperactivity disorder (pooled OR 1.72; 95% CI 1.27-2.34).

 **Intellectual disability and mental disorders in a US population representative sample of adolescents** (*Psychol Med.* 2019; 49: 952-61)

This study assessed the prevalence of intellectual disability (ID) in a population representative of US adolescents from National comorbidity survey adolescent supplement. They defined ID as intelligence quotient (IQ) less than 76 using Kaufman Brief intelligence scale with adaptive behavior score less than 76 with age at onset less than 18 years. They found that prevalence of ID was 3.2%. Of these adolescents, 65.1% fulfilled criteria for 'lifetime mental disorder' as per composite international diagnostic interview, and this group of children had more severe impairment compared to those with ID alone. The two most common mental disorders associated were phobias and bipolar disorders. The study provides a robust epidemiological data on prevalence of ID and its association among adolescents in United states.

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