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DELEGATE

NEWSLETTER

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NICE 8th Annual Conference on AUTISM

AUTCON 2024

CONNECTING THE DOTS

Pre-natal Threads, Comorbidities and Mimics

CATALYZING CONVERSATIONS | TRANSFORMING PERSPECTIVES

FROM THE DIRECTOR'S DESK

Dear Delegates,

In this issue, we explore the intersection of neuroimaging and autism, offering insights into the brain's structure-function dynamics for enhanced diagnostics and therapies. Dr. Naveena's focus on autism in adolescence provides illuminating perspectives on this crucial life phase. We trust that this compilation of newsbytes will deepen your understanding of these critical domains.

Warm regards,
Dr. S. Subramanian
Director, NICE

NICE

8th Annual Conference on AUTISM

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Co-host

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INSIGHTS ON NEUROIMAGING BIOMARKERS IN AUTISM:

Autism spectrum disorder (ASD) is a diverse heterogeneous neurodevelopmental disorder associated with both genetic and environmental factors.

Neuroimaging methods have been extensively utilized to uncover the neurophysiological mechanisms underlying ASD, offering crucial insights into the anatomical, functional, and neurochemical alterations.

Numerous advancements in neuroimaging studies focus on ASD by utilizing techniques such as magnetic resonance imaging (MRI), positron emission tomography (PET), or single-photon emission computed tomography (SPECT).

Longitudinal structural MRI has delineated an abnormal developmental trajectory in ASD that is associated to cascading neurobiological mechanisms while functional MRI has identified disrupted functional neural networks.

Current studies have shifted towards leveraging neuroimaging data to improve the clinical utility and efficacy of diagnostic outcomes.

Currently, there is no specific ASD brain imaging marker for clinical use. Individuals diagnosed with ASD typically are not referred for clinical radiology assessments except in cases where there are comorbid medical issues present (e.g., epilepsy, tuberous sclerosis).

Neuroimaging however has frequently been suggested as a means to minimize diagnostic subjectivity as well as to identify infants at risk of developing ASD.

Magnetic resonance imaging (MRI) is a crucial tool for exploring the brain of individuals with ASD.

It is a widely available, fast, and non-invasive method for measuring brain anatomy and function.

As predictive biomarkers including neuroimaging achieve excellent prediction accuracy the hope is that they will improve in prediction performance and they also reveal more precise information on the neural correlates of ASD.

In addition to the diagnostics, these identified brain areas can be reported to the physician early on so that they make more informed decisions in the future.

This helps clinicians gain a better understanding of the brain abnormalities associated with autism.

https://www.mdpi.com/2306-5354/10/1/56

What are your thoughts on linking neuroimaging with the structure, functioning of the brain and behaviour in autism?

Please share your comments at autconconference@gmail.com

SHARE YOUR INSIGHTS.
YOUR VOICE MATTERS!

AUTISM AND ADOLESCENCE

Are you aware that during adolescence, brain remodelling typically leads to improved cognitive skills, such as enhanced problem-solving, along with emotional maturity and a stronger sense of identity? Despite this, a significant segment of young people on the spectrum do not demonstrate similar progress.

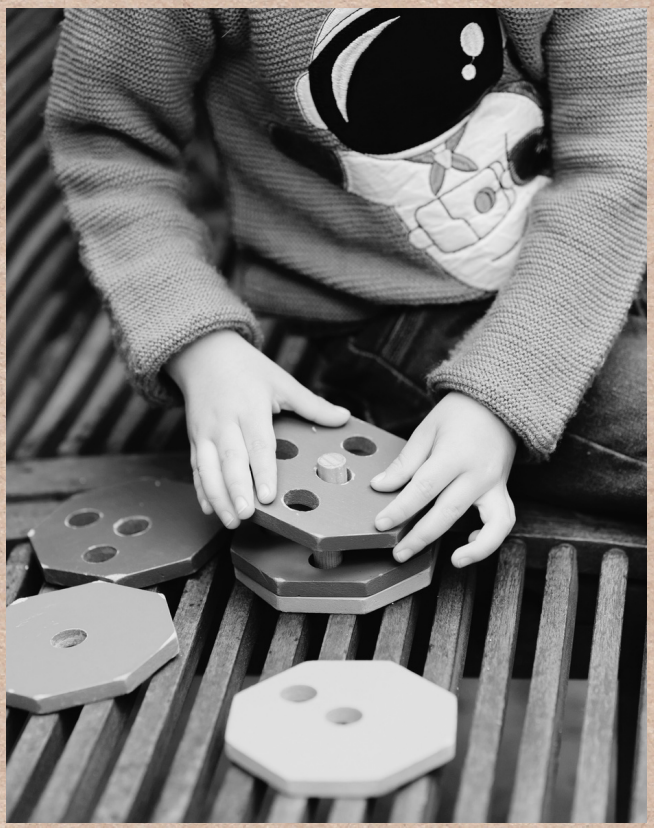
During adolescence, differences in brain wiring may result in a decreased ability for adaptation as the social and practical demands of the neurotypical world escalate. Consequently, teenagers with Autism may exhibit inappropriate responses to social cues, struggle with acquiring skills necessary for independence, and face an increased risk of mental health issues.

PUBERTY IN GIRLS

EOn another note regarding puberty in girls, there remains a debate regarding its timing, with research indicating that girls with Autism experience the onset of menstruation approximately 9.5 months earlier than their non-autistic peers. However, there is no observed difference in the timing of puberty onset for boys.

https://doi.org/10.1007/s10803-019-04192-w

GIRLS WITH AUTISM EXPERIENCE THE ONSET OF MENSTRUATION APPROXIMATELY 9.5 MONTHS EARLIER



NEURO IMAGING OF ADOLESCENT BRAIN:

Studies involving brain scans of teenagers conducted at two time points, three years apart, spanning early-to-middle and late adolescence, suggest that among typically growing and developing teenagers, there is a weakening of brain activity between the executive and default networks during this time period, likely reflecting increased separation and specialization of these networks. However, this phenomenon was not observed in teenagers with Autism, indicating a distinction in brain development that could delineate the transition in autism.

Studies show that children with Autism exhibit only modest progress in executive functions such as short-term memory and self-control during adolescence, a period when these skills typically undergo rapid development, impacting their ability to plan and form close friendships. Such developmental setbacks may leave such individuals lagging behind, as the skills they acquire during adolescence often predict their functioning in adulthood.

Please leave your valuable comments at autconconference@gmail.com

SHARE YOUR OPINION

What are your thoughts on efforts to develop methods for identifying children at risk for depression and anxiety during the pre-teen and teenage years?

How crucial is it to offer autistic girls tailored sex education at an earlier age to demystify puberty and prepare them for its challenges?

Please share your comments at autconference@gmail.com