**Use of a Brain Connectivity Growth Chart in Youth May Help ID Attention Problems**

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CHICAGO -- April 14, 2016 -- A study published online by JAMA Psychiatry suggests that it might be possible to create a growth chart of brain networks that could identify early signs of attention difficulties and, potentially, attention-deficit/hyperactivity disorder (ADHD).

Paediatricians routinely use growth charts to measure patients’ height, weight, and head circumference to look for abnormalities. Chandra Sripada, MD, University of Michigan, Ann Arbor, Michigan, and colleagues investigated whether using a growth chart to examine maturation of functional networks in the brain could identify neurocognitive abnormalities, such as attention impairment.

The researchers investigated alterations in intrinsic connectivity networks (ICNs), which are important units of brain functional organisation that show substantial maturation during youth, and attention performance. Statistical associations between deviations from normative network growth were assessed for outcomes, including a diagnosis of ADHD.

The study used publicly available data from a sample of young people who underwent assessments, including neuroimaging. The study included data from 519 adolescents (mean age, 16 years). Of those, 25 (4.8 percent) met the criteria for ADHD.

Deviations from normative maturation patterns of brain network growth appeared to be associated with impaired sustained attention performance and ADHD diagnosis.

The authors noted that their findings need to be replicated.

“This study introduces a novel brain network growth charting method for the prediction of attention impairment,” the authors wrote. “Our results invite further investigation into the use of neuroimaging to identify patterns of brain dysmaturation that can serve as early, objective markers of cognitive problems and disorder vulnerability.”

SOURCE: JAMA Psychiatry