

## **Characterising developmental trajectories of brain function from childhood into adolescence**

### **ABSTRACT:**

#### **Background**

Little longitudinal data is available tracking cognitive development using event-related potentials (ERP) during adolescence, either in typically developing (TD) youth or in high-risk youth.

#### **Aims**

1. To delineate a normative pattern of development on multiple indices of cognitive function;
2. To determine anomalies of development on these brain function indices among high-risk youth.

#### **Method**

The project used longitudinal data from the London Child Health and Development Study to examine the development of brain function among TD youth and among youth at high-risk for the development of schizophrenia, including a high-risk group with family history of schizophrenia (FHx), and another high-risk group presenting a triad of developmental antecedents of schizophrenia (ASz; i.e., motor/speech delays, social/emotional/behavioral problems, and psychotic-like experiences). Data from three assessments in the cohort were used, spanning middle childhood (9-11 years), early adolescence (11-13 years), and mid-adolescence (13-16 years).

#### **Results**

We characterised the trajectories of normative development among TD youth, and demonstrated that high-risk ASz and FHx youth display some early cognitive deficits that remain stable during adolescence. On other cognitive measures, ASz and FHx children showed faster rates of development during adolescence than their TD peers, so that early delays observed in brain function normalised later in adolescence.

#### **Conclusion**

These differential patterns of deviation from normative adolescent cognitive development among high-risk youth imply scope for targeting interventions to specific cognitive deficits at different developmental phases.

#### **Keywords**

Child and adolescent development, Developmental psychopathology, Cognition, Event-related potentials

**Published Work:**

Laurens, K. R., & Cullen, A. E. (2016). Toward earlier identification and preventative intervention in schizophrenia: Evidence from the London Child Health and Development Study. *Social Psychiatry and Psychiatric Epidemiology*, 51(4), 475-491. doi: 10.1007/s00127-015-1151-x

Lancefield, K. S., Raudino, A., Downs, J. M., & Laurens, K. R. (2016). Trajectories of childhood internalizing and externalizing psychopathology and psychotic-like experiences in adolescence: A prospective population-based cohort study. *Development and Psychopathology*, 28(2), 527-536. doi: 10.1017/S0954579415001108

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