

Title: The Developmental Origins of Mental Disorders: Insights From the Singapore Cohort Studies

Individual differences in the risk for multiple forms of psychopathology can be traced to environmental influences operating during neurodevelopment. However, epidemiological studies of environmental factors bear two major weaknesses: 1) such studies do not inform on the underlying biological mechanisms and 2) environmental conditions, taken alone, account for a small percentage of the variation in subsequent mental health outcomes. The Singapore Institute for Clinical Sciences (A*STAR) and its National University of Singapore have launched a series of longitudinal birth cohort studies that integrate extensive perinatal measures of environmental conditions with multiple biological analyses (genotyping, epigenotyping, metabolomics including microbiome sampling) with 'deep phenotyping of developmental outcomes, including longitudinal neuroimaging beginning shortly after birth. The emerging data emphasize the importance of the maternal phenotype operating during prenatal development in shaping neurodevelopmental outcomes.