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L.M. Leijser, A. Siddiqi, S.P. Miller



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Imaging Evidence of the Effect of Socio-Economic Status on Brain Structure and**Development**

LM Leijser¹, A Siddiqi², SP Miller¹

¹ Department of Pediatrics, University of Toronto and The Hospital for Sick Children, Toronto, Canada

² Dalla Lana School of Public Health, University of Toronto, Toronto, Canada

Abstract

Numerous studies have shown an association between children's socio-economic status (SES) and disparities in neurocognitive development, achievements and function later in life. Research focus has recently shifted to imaging of the brain's response to the child's environment. This review summarizes the emerging studies on the influences of early-life SES on brain structure and development, and addresses the relation between brain development and enriched environments. The studies provide evidence of significant associations between SES and brain structure, growth and maturation, not only in healthy infants and children but also in infants with medical conditions. This suggests that the relation between SES and later-life function and achievements operates through alterations in brain maturation. While the brain changes seem to persist without intervention, animal models of environmental enrichment show the potential of SES-related brain changes to be reversible and dynamic. This review underscores the critical need for reducing the impact of socio-economic disparities and early targeted and prolonged interventions, and highlights the potential of these interventions leading to optimal opportunities for our youngest.

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