

Linking Early Brain and Biological Development to Psychiatry

This special issue in the *Journal of the Canadian Academy of Child and Adolescent Psychiatry* provides a dynamic picture of the growth of interest and research in the topic of early determinants of brain development and function. The image of a plastic brain – one that is resilient but also susceptible to adverse experience – is becoming engrained in how we understand brain development. The work of Kolb, Suomi and others point the direction to a deeper understanding of the interplay between genes and environment in orchestrating the molecules, cells and connections that underlie brain function.

This set of articles highlight what is a growing number of exciting “start-ups” that are concerned with the brain. New efforts to help fund this research are the Ontario Brain Institute and BrainCanada. Other relatively new arrivals that will help us focus our research efforts include the Maternal Infant Child Youth Research Network (MICYRN) that serves as an umbrella for children’s hospitals across Canada to foster clinical research to improve practice and care. In addition, the symposia summaries in this special edition (as synopsised by Attridge and Ghali) provide a view as to the special commitment that the Norlien Foundation has made to translating our burgeoning knowledge about the brain and development toward improving understanding, care, treatment, and outcomes. Hopefully the seeds that have been sowed by this Foundation, and have taken root in Alberta, can be transplanted to similar successes across Canada. The other “activists”, stalwarts and stewards of infant and child development have been the many parent advocacy groups and larger umbrella organizations such as the Canadian Association of Paediatric Health Centres.

To this confluence of efforts, a new Network of Centres of Excellence (www.nce-rce.gc.ca/) in Brain Development (neurodevnet.ca) has been funded by the federal government. The efforts of NeuroDevNet are several fold:

1. To develop research programs directed toward understanding neurodevelopmental disorders with an initial focus on autism spectrum disorder, cerebral palsy, and fetal alcohol spectrum disorder – that seek solutions to pressing issues such as the genetic and epigenetic origins of these disorders, evidence-based interventions, and early detection and early intervention;
2. NeuroDevNet incorporates three aspects that are relatively unique to efforts in this area. These “Cores” are meant to cut across the research platforms and provide support for the accumulation and analysis of large datasets (neuroinformatics), the appreciation and sensitivity to ethical considerations (neuroethics), and to the transmission of the knowledge we gain in our research to best practices and policies (knowledge translation);
3. To develop a national training program of basic scientists and clinicians to fuel the research and discoveries for our next generation;
4. Connecting and partnering with like-minded individuals and institutions to create a ground swell of interest and activity in the area of brain development.

The translation of NeuroDevNet’s work, and that of others, to policy and best practices in the clinic will rely on the collaboration of the many stakeholders across the space of advocates, researchers, and policymakers with the goal of Canada leading the way in innovative programs that are directed toward the prevention and amelioration of neurodevelopmental disorders. I optimistically see this as a good “perfect storm” as one might see a slow and steady rain to a region of prolonged drought. The implications for this confluence of interests are nicely enumerated in the introductory article by Attridge and Ghali. This is an exciting time to be involved in neurodevelopmental research and its application to improve children’s lives.

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