

## Infant and Early Childhood Mental Health (IECMH) Guide for Professionals: Brain Development

### Here is what we know about brain development:

- Genes, environments, relationships and lived experiences all work together to shape the architecture of a child's brain; early childhood experiences matter.
- Brain development begins in pregnancy and undergoes its most rapid and critical period of growth during the first 2000 days.
  - Latest research shows that more than 1 million new neural connections are made each second.
  - Brain development occurring in the first 2000 days is highly vulnerable to the effects of toxic stress. Toxic stress is defined as ongoing stress that occurs in the absence of a caring and responsive caregiver. It can have an impact on learning, behaviour, and both physical and mental health.
  - Studies have shown that providing supportive, responsive relationships can protect against or reverse the damaging effects of toxic stress.
- Social, emotional, physical, and cognitive capacities (e.g., executive functions), continue to develop throughout childhood and into early adulthood.

### Within your professional role and considering the [social determinants of health](#), how do you:

- Explore how the caregiver is sensitive and responsive to the child's cues, feelings and needs?
- Explore child and caregiver connection opportunities based on positive interactions (e.g., playing, talking, singing)?
- Share screen time guidelines and the impact screen time may have on brain development and the formation of secure attachments with caregivers? The [Canadian Pediatric Society's](#) screen time guidelines are:
  - Children under 2 years old: screen time is not recommended.
  - Children 2 to 5 years old: firmly limit screen time to less than 1 hour per day. There is no evidence demonstrating recreational screen time benefiting early childhood development; less is best.
- Discuss coping and support mechanisms with caregivers?
- Explore connection opportunities to informal and formal supports (e.g., professional and peer community-based supports and services)?
- Support caregivers in having developmentally appropriate expectations for their child?
- Administer appropriate screening tools that advise on if a child is within the typical developmental milestone range? How do you manage referrals?

## Where can you find more information?

- [Encyclopedia on Early Childhood Development: Brain](#)
- [Harvard University, Center on the Developing Child: Key Concepts, Brain Architecture, Serve and Return, Toxic Stress](#)
- [Best Start, Healthy Baby Healthy Brain](#)
- [Comfort Play and Teach](#)
- [City of Hamilton: Parenting with LOVE - Brain Development](#)
- [Public Health Agency of Canada: Social Determinants of Health](#)

## Where can you find services that support families?

- [Parenting in Ottawa](#)
- [Parent Resource Centre](#)
- [Community Navigation of Eastern Ontario/211](#)
- [Ottawa Public Health Mental Health and Substance Use Services and Resources](#)

## References:

- [Harvard University, Center on the Developing Child: Key Concepts, Brain Architecture](#)
- [Fraser Mustard Institute for Human Development](#)
- [Harvard University, Center on the Developing Child: Five Numbers to Remember about Early Childhood Development](#)
- [Harvard University, Center on the Developing Child: Toxic Stress Derails Healthy Development](#)
- [Make No Little Plans: Ontario's Public Health Sector Strategic Plan](#)