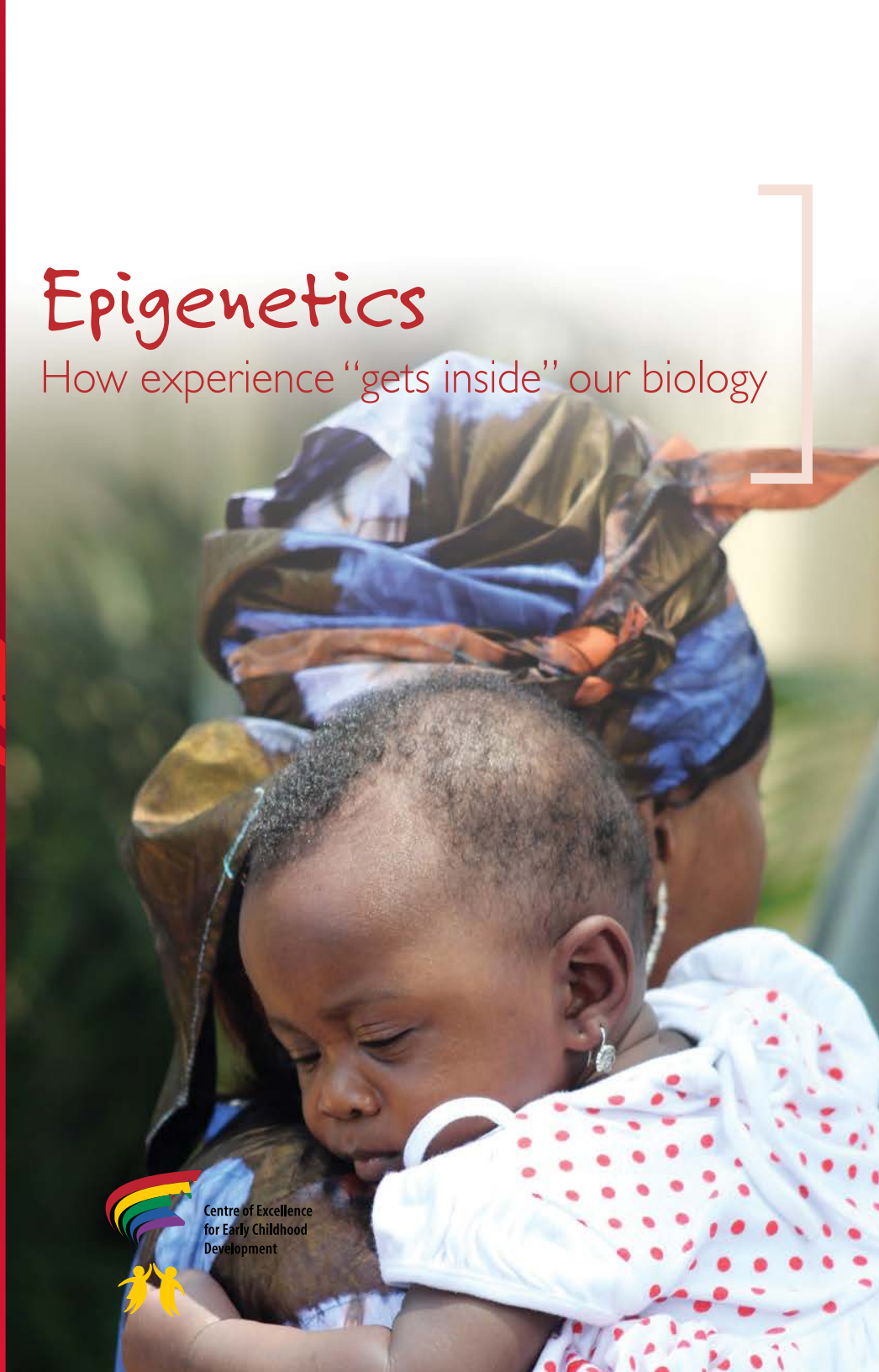


Eyes on



# Epigenetics

How experience “gets inside” our biology



PARENTS



**“Epigenetics is a process in which our cells are changed by our environment.”**

## What do we know?

- The regions of children’s brains that control their movements and senses (e.g., touch, smell, sight, hearing and taste) are affected by information passed on through their genes and present in their environment.
- Epigenetics is a process in which our cells are changed by our environment. Our experience becomes part of our biology.
- An epigenetic mark is a chemical tag that gets added to our genes (our DNA) in response to our experiences. This tag can increase or decrease the amount of protein that a gene makes.
- Proteins made from our genes are used in our bodies and brains as we grow and develop. They also can keep us healthy.
- These epigenetic tags influence whether children will be on a path towards more or less healthy development as they grow and develop, depending on their experiences.
- When children are neglected or maltreated early in life, epigenetic changes take place that make their brain less able to adapt to change or handle stress.
- In contrast, when children experience love, support and attention from caring parents, they are more able to adapt to change and handle stress.
- The effects of adverse experience can be passed down to future generations.
- Research now suggests that some epigenetic tags may be reversible.
- Interventions that target children’s problems early in life can put them back on a positive path in their development.

## Paying attention to...

... the environment of babies and children that affect their brain development.

... positive experiences that a developing infant and child need to set them on the path to good mental and physical health.

## What can be done?

- Provide a sensitive, reliable, calm and smoke-free environment for your children.
  - Comfort babies by responding quickly to any signs of discomfort, worry or distress. For example, be loving and caring, speak softly, and hold them in your arms.
  - Build a secure and trusting relationship with your children by showing them that they can trust you to be supportive and to take care of them.
- 
- Stimulate your children's senses. Let them experience new sights, sounds, food and objects.
  - Speak and read to your children. This will expose them to many different words and help them learn language (e.g., shared book reading, storytelling).
  - Play with your children so they can learn to share, control their emotions and use their imagination.
  - Allow your children to explore their environment by providing structure and supervision, and by setting limits. Let the children lead the way in exploration and play while keeping them safe.



Encyclopedia  
on Early Childhood  
Development

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DesJardins Conception Graphique inc.

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# Information

This information sheet is a publication of the Centre of Excellence for Early Childhood Development (CEECD). CEECD identifies and summarizes the best scientific work on early childhood development. It disseminates this knowledge to a variety of audiences in formats and languages adapted to their needs.

For a more in-depth understanding of Epigenetics, consult our experts' texts in the Encyclopedia on Early Childhood Development, available free of charge [www.child-encyclopedia.com](http://www.child-encyclopedia.com).

Several organizations financially support the CEECD, including, Université Laval, Université de Montréal and private foundations. The views expressed herein do not necessarily represent the official policies of these organizations.

We are grateful to the Canadian Institute for Advanced Research (CIFAR) for its contribution to produce this information sheet.

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