

Research explores the relationship between the mother-child bond and stress

October 30 2009



Psychology professor Leslie Atkinson: "Attachment is the child's first strategy to deal with stress. As such, it plays a major role in our mental health as adults."

(PhysOrg.com) -- It's the age-old psychological conundrum: nature versus nurture. Are children more, less or equally affected by their genetics and the environment in which they grow up? Professor of Psychology Leslie Atkinson is working to advance one aspect of this often-perplexing question.

As faculty supervisor in the Biopsychosocial Development Lab, Atkinson studies the biological, psychological and social influences on human development. His current research examines the concept of attachment - the intense relationship between a child and his or her primary caregiver, usually the mother.



Attachment helps babies build confidence, encouraging them to explore their environment. "Attachment really is the child's first strategy to deal with stress," says Atkinson. "As such, it plays a major role in our mental health as adults."

Attachment programs a child psychosocially and physiologically. Research shows that poor attachment can be linked to anxiety and depression, and <u>aggression</u> and <u>hostility</u>. Attachment also affects the hypothalamic-pituitary-adrenal (HPA) axis — one mechanism that controls reactions to stress, including the secretion of cortisol (a.k.a. the stress hormone).

Cortisol, in the right amount, is essential to the body. It is involved in blood pressure and <u>cardiovascular function</u>, slows the immune system's inflammatory response, maintains glucose levels, and helps regulate the metabolism of proteins, carbohydrates and fats.

Atkinson's research has shown when infants deal with stress that goes beyond their level of maturity, the HPA axis secretes atypical levels of cortisol. Prolonged, atypical cortisol secretion has been linked to many physical diseases and ailments, including diabetes, cancer and even the common cold.

"Cortisol can also affect executive or higher-order cognitive functions planning abilities, emotional regulation and memory," explains Atkinson. "And it can affect one's 'attentional capacity' - how well you can focus on things and drive out other distractions."

In his current study, funded by the Canadian Institutes of Health Research, Atkinson recruited volunteer moms and babies from daycares and baby-focused trade shows. During each experiment, researchers collected saliva to measure the cortisol levels of the mothers and their children. When the infant is six months old, researchers observe the



interactions between mom and baby, and then challenge the baby in some way (e.g. mother does not emotionally react to the child). At 15 months old, the challenge involves taking away an attractive toy during a home visit. At the age of 16 months, in the lab, mom leaves the baby alone in a room for a short period.

"During these experiments, we've found that babies under stress have the same <u>cortisol</u> response to stressors as their mothers, and that their mothers' own early experience may contribute to this response," says Atkinson. "It's a trans-generational response." But, he points out, current environment also plays a role. "The current response depends on contemporary stressors as well as past ones."

Atkinson expects that the trans-generational response can be impacted by intervening with the parent, for example providing help with her/his parenting style and managing problems. "By raising awareness that early experiences affect brain development," says Atkinson, "we can inform the work of policy-makers as they allocate resources for programs aimed at prevention and early intervention in parents' lives."

Provided by Ryerson University

Citation: Research explores the relationship between the mother-child bond and stress (2009, October 30) retrieved 30 April 2024 from <u>https://medicalxpress.com/news/2009-10-explores-relationship-mother-child-bond-stress.html</u>

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