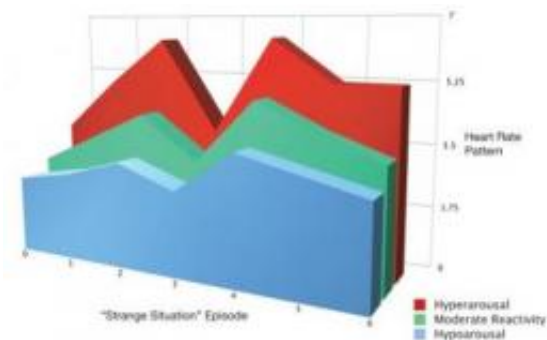


How chronic stress short-circuits parenting

October 5 2011



Mothers with higher depressive symptoms exhibited overactive stress responses, the "hyperarousal" pattern shown in red, while moms who struggled with poverty had underactive responses, the "hypoarousal" pattern shown in blue. Each extreme was associated with distinct types of problematic parenting, from neglect and hostility to insensitivity. Credit: University of Rochester

In the best of circumstances, raising a toddler is a daunting undertaking. But parents under long-term stress often find it particularly challenging to tap into the patience, responsiveness, and energy required for effective child rearing.

Now research from a University of Rochester team helps to explain why [chronic stress](#) and parenting are such a toxic mix. The study finds that ongoing strains, like poverty or depression, disrupt the body's natural stress response, making mothers more likely to engage in a host of problematic parenting behaviors, including neglect, hostility, and insensitivity.

"Stress gets under your skin," explains Melissa Sturge-Apple, assistant professor of psychology at the University of Rochester and lead author on the *Development and Psychopathology* paper to be published October 19. "It literally changes the way a mother's body responds to the normal demands of small children and those changes make it much harder to parent positively."

Although the [effects of stress](#) have been well documented in children and linked to a variety of diseases in adults, this is one of the first studies to look specifically at stress and parenting, according to the researchers. The findings point to the corrosive effects of poverty or depression on an individual's physiology and help to explain why people feel and act the way they do when faced with ongoing psychological or economic pressure, she says.

"Stress is not just in our heads, it's in our bodies," says Sturge-Apple.

This is also the first study to measure physiological stress response in real time, says Fred Rogosch, research director at the University of Rochester's Mt. Hope Family Center and a fellow author on the paper. Participants' reactions were captured using a novel wireless electrocardiograph (ECG) monitor developed for the study by University of Rochester engineers Zeljko Ignjatovic and Wendi Heinzelman. The unobtrusive device allowed the team to analyze subtle changes in participants' heart rhythms as they were happening, providing a non-behavioral window into how the study moms were reacting. Other methods, such as measuring the stress hormone cortisol, require a 20-minute delay and are not nearly as precise, explains Rogosch.

The new monitor could become an important tool for measuring stress outside of the lab, the authors write. For example, it could be used in clinical settings as a kind of emotional biofeedback monitor, giving therapists a way to quantitatively gauge which therapies work best for

alleviating negative emotions, according to the researchers.

In the study, the researchers observed 153 mothers and their 17-to-19-month-old children in individual two-hour sessions. Using the wireless ECG monitor, each mother's stress response was measured during a mildly distressing situation in which her child was left with a stranger for a few minutes. Later the mother and toddler were videotaped during unstructured playtime together.

The study showed that a mother's stress system can be compromised by becoming either overactive or underactive. In mothers with higher depressive symptoms, stress responses were "hyperactive", the researchers found. These moms' heart rate patterns began higher, then spiked when their toddler was upset. After the mom was reunited with the child, their heart rate pattern remained elevated. During the free-play sessions, mothers with hyperactive stress responses engaged in the highest levels of hostility with their toddler, including derogatory comments, angry tone of voice, and rough physical interaction.

Although the popular image of depression is of someone who is listless and sad, Sturge-Apple points out that the study confirms what clinicians have long observed: that depression in mothers sometimes is linked to harsh, highly reactive parenting, not subdued mothering. This study helps to explain the biological basis of such behavior; the stress response systems of moms suffering from depression are on high alert, oversensitive to social stressors and unable to calm down, explains Sturge-Apple.

By contrast, study participants who struggled with poverty and lived in high-crime neighborhoods exhibited underactive, or "hypoactive," [stress response](#) systems. Their heart rates patterns began lower and rose little during their child's distress. During free play, these parents showed the highest levels of disengagement along with intrusive parenting. Although

instructed to play with their children, these mothers were more likely to ignore their little ones and not respond to children's bids for attention or play. When they were engaged, mothers with hyporesponsive stress activity were overbearing. The researchers argue that the dampened physiological response to a child's anguish results from the "cumulative wear and tear ... of living in poverty and dangerous neighborhoods." Faced with threats and concerns on a daily basis, these moms' [stress](#) systems simply become overwhelmed, concludes Sturge-Apple.

Provided by University of Rochester

Citation: How chronic stress short-circuits parenting (2011, October 5) retrieved 27 April 2024 from <https://medicalxpress.com/news/2011-10-chronic-stress-short-circuits-parenting.html>

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