

Parental stress biology and mental health symptoms affect young children

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Parental depression and anxiety can have profound effects on children. For the first time, Penn State researchers demonstrated that stress biology relates to depressive and anxiety symptoms differently for mothers versus fathers, and that parents' profiles of stress biology and symptoms can predict their preschoolers' emotional and behavioral problems.

According to Erika Lunkenheimer, associate professor of psychology and Social Science Research Institute cofunded faculty member, [anxiety](#) and depression are some of the most commonly experienced mental health symptoms by adults in the United States.

"Almost 70% of symptomatic women are [mothers](#) and almost 60% of symptomatic men are fathers. Both mothers and fathers of young children are at risk for developing anxiety and [depressive symptoms](#), in part due to the additional stressors experienced in parenthood," said Lunkenheimer.

The goal of the project was to gain a better understanding of parents' anxiety and depressive

symptoms because they may negatively impact children's outcomes through their effects on parenting practices and face-to-face interactions. The researchers focused on determining how symptoms and [stress](#) physiology clustered into profiles, how these profiles differed between mothers and fathers, and how they predicted a child's emotional and behavioral difficulties over time.

The researchers measured parents' respiratory sinus arrhythmia (RSA) in 126 families of three-year-old children, both during times when parents were at rest and also during challenging tasks with their preschoolers.

"RSA is considered a biomarker of mental health and self-regulation, but it is not yet clear how RSA relates to symptoms in parents of young children," said Lunkenheimer. "Preschoolers require frequent support from parents, and sometimes providing this support can be stressful. We wanted to see if parents' stress responses during challenging interactions with their preschoolers combined with their [symptom](#) levels to put children at heightened risk for their own difficulties with emotional or behavioral self-regulation."

The researchers found four different profiles of stress biology and symptoms for mothers and three for fathers. For mothers, they found that depressive and [anxiety symptoms](#) were associated with different stress biology responses.

"When mothers had higher depressive symptoms, they showed lower than average reactivity to challenging tasks with their children. But when mothers had higher anxiety symptoms, they showed higher than average reactivity to challenging tasks with their children," Lunkenheimer said.

For fathers, the researchers found only one higher-risk profile that included both higher depressive and

anxiety symptoms and lower than average reactivity to challenge with their children.

"For both mothers and fathers, we interpret this lower reactivity to mean that these parents are struggling to engage sufficiently to support their children in these challenging situations," said Lunkenheimer.

Interestingly, the researchers found that all parent profile types that had either elevated symptom levels or higher or lower than average stress reactivity predicted children's higher emotional and behavioral difficulties one year later.

"Our results suggest both mothers and fathers have the potential to transmit regulatory difficulties to children in the preschool years, and that their symptom and stress biology profiles are one potential pathway of this transmission," said Lunkenheimer.

This work appears in the journal *Developmental Psychobiology*.

In the future, Lunkenheimer plans to investigate the effects of parent self-regulation and stress biomarkers on how [parents](#) and children coordinate their emotions and behaviors during challenging tasks, and how these processes in turn influence children's self-regulation.

"This work suggests that it is critical to include [fathers](#) in research on [children's](#) early [self-regulation](#) and mental health, as they may be contributing something different than mothers," said Lunkenheimer.

More information: Amanda M. Skoranski et al. Person-centered profiles of parasympathetic physiology, anxiety symptoms, and depressive symptoms in mothers and fathers of young children, *Developmental Psychobiology* (2020). [DOI: 10.1002/dev.22043](https://doi.org/10.1002/dev.22043)

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