

Immune system irregularities found in women with postpartum mood disorders

December 2 2022, by Laura Coverson



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Women with prolonged mental health problems up to three years after childbirth may be suffering from irregular immune system responses, according to new research by Cedars-Sinai investigators. The findings are published in the *American Journal of Reproductive Immunology*.

"We found that women who had clinically elevated symptoms of

depression, anxiety, and/or [post-traumatic stress disorder](#) (PTSD) two to three years after delivery had genetic evidence of a higher prevalence of immune system defense mechanism activation," said Eynav Accortt, Ph.D., principal investigator of the study and director of the Reproductive Psychology Program at Cedars-Sinai.

"These women also appeared to have a reduction in the activity of genes related to antiviral immune responses that can offer the body protection from pathogens," said Accortt, a clinical psychologist.

According to the Centers for Disease Control and Prevention, about 1 in 8 women experience significant symptoms of perinatal mood and anxiety disorders that can interfere with overall health, daily activities and family life. Much of the research into maternal mental health to date has focused on the perinatal period and the first year after childbirth.

Cedars-Sinai investigators surveyed 33 women about their mental health over a longer period, two to three years after giving birth. Study participants also provided a [blood sample](#), and scientists performed bioinformatic analyses of differential gene expression.

"Delayed or persistent postpartum anxiety, depression and PTSD is an area that is woefully understudied," said Sarah Kilpatrick, MD, Ph.D., chair of the Department of Sarah Kilpatrick, MD, Ph.D., chair of the department of Obstetrics and Gynecology at Cedars-Sinai and one of the study's co-authors.

"In this preliminary research, we have identified [genetic differences](#) related to inflammation when comparing women experiencing prolonged symptoms of mood and [anxiety disorders](#) to those who did not report poor mental health. Additional studies will be needed for a deeper dive into the role inflammation may play in postpartum mental illness," said Kilpatrick.

A primary goal of this work is to design a [blood test](#) that would detect which women are at the highest risk for serious and prolonged postpartum mood disorders, according to Accortt.

"A blood test could help us develop early interventions that provide medical and mental health treatments and support. We want to figure out why some women are at greater risk for depression, anxiety and PTSD. No one should have to suffer for years after childbirth," said Accortt.

More information: Jennifer M. Nicoloro-SantaBarbara et al, Immune transcriptional profiles in mothers with clinically elevated depression and anxiety symptoms several years post-delivery, *American Journal of Reproductive Immunology* (2022). [DOI: 10.1111/aji.13619](https://doi.org/10.1111/aji.13619)

Provided by Cedars-Sinai Medical Center

Citation: Immune system irregularities found in women with postpartum mood disorders (2022, December 2) retrieved 13 March 2024 from <https://medicalxpress.com/news/2022-12-immune-irregularities-women-postpartum-mood.html>

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