

# How pregnancy changes the parental brain

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Pregnancy and birthing have profound, often long-lasting, effects on brain physiology, mood and behavior. New findings on the neurobiology of the maternal experience were presented at Neuroscience 2022, the annual meeting of the Society for Neuroscience and the world's largest source of emerging news about brain science and health.

Maternal mental health conditions are among the most common complication of pregnancy and childbirth. Of the roughly 3.5 million people who give birth each year in the United States, approximately 20% will be impacted by mental health conditions, such as depression and anxiety.

Left untreated, these illnesses can have long-term negative impacts on parents, babies, families, and society. Research into the brain changes associated with maternal experiences is beginning to reveal the neural mechanisms underlying adaptive changes and perinatal mental illnesses.

Today's new findings show that:

- Susceptibility or resiliency to postpartum depression in a rodent model is associated with changes in neuroimmune markers and hormones that could serve as risk biomarkers or possible therapeutic targets for the condition. (Janace Gifford, University of Delaware)
- Factors that regulate [gene expression](#) in learning and memory networks may mediate long-term effects of maternal experience in the brain in mice. (Ian S. Maze, Icahn School of Medicine at Mount Sinai)
- The long-lasting antidepressant effects of allopregnanolone in [postpartum depression](#) may be due to effects on coordination of activity across brain regions implicated in mood. (Jamie Maguire, Tufts University School of Medicine)

"The neuroscience findings presented today touch on different aspects of the transition to motherhood at multiple levels of investigation and in varied [brain areas](#)," says session moderator Jodi Pawluski, a neuroscientist and psychotherapist whose research is affiliated with the Université de Rennes 1 and who studies how motherhood changes the brain.

"These investigations into the maternal brain provide important insights into the neuroscience of parenting and have implications for targeting and treating perinatal mental illness."

**More information:** Conference:

[www.sfn.org/meetings/neuroscience-2022](http://www.sfn.org/meetings/neuroscience-2022)

Conference abstract: [www.abstractsonline.com/pp8/#!/.../presentation/83653](http://www.abstractsonline.com/pp8/#!/.../presentation/83653)

Conference abstract: [www.abstractsonline.com/pp8/#!/.../presentation/84415](http://www.abstractsonline.com/pp8/#!/.../presentation/84415)

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