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Hormones impact stress, memories, and understanding social cues

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Research released today demonstrates unexpected roles that sex hormones may play in the cognitive function of females, including memory and interpreting social cues. Additionally, a chemical identified in pregnant mice may provide insight into developmental disorders, such as schizophrenia. The findings were presented at Neuroscience 2013, the annual meeting of the Society for Neuroscience and the world's largest source of emerging news about brain science and health.

Today's new findings show that:

- Maternal stress can reduce levels of a chemical in the placenta that influences many other functions, such as development in mice. Additionally, the chemical could serve as a biomarker for maternal stress, a known risk factor for neurodevelopmental disorders like autism and schizophrenia (Tracy Bale, PhD, abstract 380.08, see attached summary).
- Estrogen replacement therapy in post-menopausal women may help prevent stress-related memory loss (Alexandra Ycaza, MA, abstract 376.1, see attached summary).

Other recent findings discussed show that:

- Tamoxifen, a drug used to treat breast cancer, may protect against cognitive loss in post-menopausal women (Paul Newhouse, MD, presentation 376.03, see attached speaker summary).

- Estrogens, commonly thought of as a female reproductive hormone, are produced in the brains of males and females. In songbirds, estrogen may help process auditory social cues in both sexes and visual cues in males (Luke Remage-Healey, PhD, presentation 204.06, see attached speaker summary).

"Researchers are recognizing there are more differences between male and female biologies than originally thought," said press conference moderator Catherine Woolley of Northwestern University, an expert on hormones such as estrogen. "These new studies help to show how sex differences and the actions of hormones in the brain affect how we develop, respond to the environment, and how we age. Through understanding sex differences, we can improve the way biology informs medicine."

Provided by Society for Neuroscience