Effects of maternal stress on later life

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Prenatal exposure to maternal stress may negatively impact the ability to cope with stress later in life, suggests a study published online this week in *Translational Psychiatry*. This study demonstrates that exposure to stressors before birth affects the expression of the glucocorticoid receptor (GR) gene, which is important for the stress response and associated with behavioral problems and mental illness in human offspring.

DNA methylation involves the addition of a methyl group to one of the bases that make up DNA. This modification can stably alter gene expression, without any changes in DNA sequence. Helen Gunter and colleagues analyzed the methylation in the promoter of the GR gene in 25 mothers and their children at 10 to 19 years after birth, while Thomas Elbert and colleagues...
evaluated maternal exposure to intimate partner violence (IPV) before, during, and after the pregnancy using the Composite Abuse Scale.

The teams find that prenatal exposure to IPV is associated with sustained alterations in the methylation of the GR promoter, which could be the mechanism by which stressed mothers program later psychopathology in their offspring. They note specifically that only maternal stress during gestation is associated with the child’s ability to express the GR gene. The authors caution however that the study data represents correlative findings and cannot definitively prove a causal relationship between changes in DNA methylation and adverse experiences.

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