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**Stress in Pregnancy May Influence Baby Brain Development**

An infant’s brain may be shaped by levels of stress their mother experiences during pregnancy, according to a study published in *eLife*.

Maternal stress is known to influence the development of a child’s behaviour and ability to regulate his or her emotions as they grow. This is usually measured by questionnaires, which are not always reliable.

The current study is the first time that researchers have used an objective measure -- levels of cortisol -- in the mother to study links with baby brain development.

For the study, David Q. Stoye, University of Edinburgh, Edinburgh, United Kingdom, and colleagues took hair samples from 78 pregnant women to determine the women’s levels of cortisol in the previous 3 months. Their babies underwent a series of brain scans using magnetic resonance imaging to examine the structure of the amygdala, and determine how it is connected to other parts of the brain.

The researchers found that there was a relationship between maternal hair cortisol concentration and amygdala development that differed according to infant sex. Higher hair cortisol concentration was associated with higher left amygdala fractional anisotropy, lower left amygdala orientation dispersion index, and higher fractional anisotropy in connections between the right amygdala and putamen in girls compared with boys. Furthermore, altered amygdala microstructure was only observed in boys, with connectivity changes restricted to girls.

The authors noted that the findings could explain why children whose mothers experienced high levels of stress during pregnancy may be more likely to have emotional issues in later life.

They caution, however, that the study did not assess emotion in children.

“Our findings are a call to action to detect and support pregnant women who need extra help during pregnancy as this could be an effective way of promoting healthy brain development in their babies,” concluded James Boardman, PhD, University of Edinburgh.

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SOURCE: University of Edinburgh