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Study links gene mutation to neurodevelopmental disorders

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A new model created by UCLA scientists reveals how the alteration of a specific gene increases the risk for neurodevelopmental problems in mice. When the researchers mutated the gene, it produced symptoms at

specific ages in the animal's life.

Called Glut3, this gene is responsible for moving glucose—the fuel essential to normal function—into brain cells, and plays a crucial role in fetal growth during early pregnancy.

Previous studies have linked a GLUT3 mutation in mice to miscarriage and restriction of the fetus' growth in the last trimester of pregnancy.

"Our findings could lead to new insights for preventing and treating pediatric neurodevelopmental conditions such as autism, anxiety disorders and attention deficit/hyperactivity disorder," said lead author Dr. Sherin Devaskar, physician-in-chief of UCLA Mattel Children's Hospital and executive director of the UCLA Children's Discovery and Innovation Institutes.

The Eunice Kennedy Shriver National Institute of Child Health and Human Development supported the study, which is published in the *Journal of Neuroscience*.

More information: Bo-Chul Shin et al. Neural Deletion of Glucose Transporter Isoform 3 Creates Distinct Postnatal and Adult Neurobehavioral Phenotypes, *The Journal of Neuroscience* (2018). DOI: 10.1523/JNEUROSCI.0503-18.2018

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