Maternal obesity may alter fetal brain development

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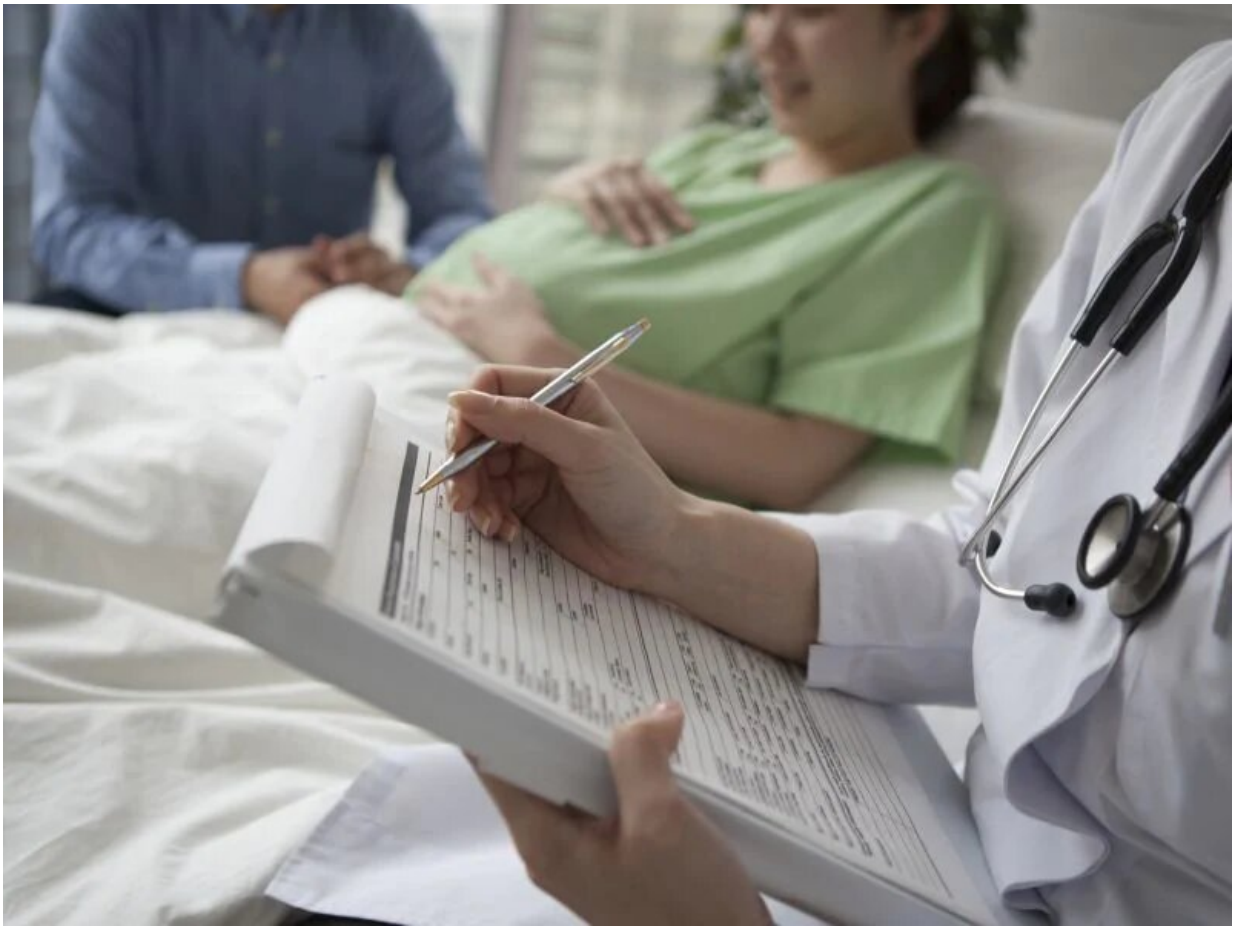

(HealthDay)—Obesity in pregnant women may impact the development

of their offspring's brains, according to a study published online Aug. 10 in the *Journal of Child Psychology and Psychiatry*.

Megan E. Norr, from the University of California Berkeley, and colleagues assessed whether magnetic resonance imaging functional connectivity within or between fetal neural subnetworks varies with maternal prenatal body mass index (BMI) among 109 fetuses (between 26 and 39 weeks of gestation).

The researchers found that the strength of connectivity between two subnetworks—left anterior insula/inferior frontal gyrus (aIN/IFG) and bilateral prefrontal cortex (PFC)—varied with maternal BMI. In higher BMI pregnancies, the investigators observed both increased and decreased between-network connectivity, with a tendency for increased within-hemisphere connectivity and reduced cross-hemisphere connectivity, at the level of individual aIN/IFG-PFC connections. Based on network-based statistical analyses, there was no association noted between maternal BMI and global differences in network topography.

"By establishing onset in neural differences prior to birth, this study supports a model in which maternal BMI-related risk is associated with fetal connectome-level brain organization with implications for offspring long-term cognitive development and mental health," the authors write.

More information: Abstract/Full Text (subscription or payment may be required)

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