

[IMAGE]

Pregnancy Weight Matters

By Editorial Staff

And not just for the health of the expectant mother. Excess weight / weight gain during pregnancy is also a risk factor for negative childhood outcomes, suggests a growing body of research. Case in point: a new study suggesting maternal weight gain may influence fetal brain development as it relates to eating habits.

The study involved pregnant mice (which are frequently used in research because mice are similar to humans in terms of anatomy, physiology and genetics), divided into two groups for comparison. One group had access to unlimited high-fat food during pregnancy / breastfeeding, while the other group had unlimited access to healthy food during the same time window.

As you might expect, pregnant mice on the high-fat diet gained weight (became obese), while pregnant mice on the healthy diet stayed trim. Predictably, their offspring tended to be heavier or lighter at birth depending on the maternal diet consumed. However, there's much more to the story, as we alluded to earlier.

Once born, all of the babies received several weeks of unlimited healthy food (at which time their weight equalized), followed by unlimited access to unhealthy food. Here's where things got interesting: The children of mice born to the obese mothers were more likely to overeat the unhealthy food – as if they'd been conditioned to do so while in the womb. The researchers emphasize this possibility based on their findings, published in *Molecular Metabolism*:

"[B]oth male and female maternally over-nourished offspring are highly susceptible to diet-induced obesity. This is associated with altered synaptic strength in an extended amygdala-lateral hypothalamic pathway, which is predicted by developmental growth rate. Additionally, lateral hypothalamic neurons receiving synaptic input from the bed nucleus of the stria terminalis have enhanced excitatory input following maternal overnutrition which is predicted by early life growth rate."

Put in simpler terms: Maternal overeating / obesity may have influenced fetal brain development ("rewires hypothalamic feeding circuits," per the authors) in a manner that shapes their eating habits as adults.

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