

Effects of a poor diet during pregnancy may be reversed in female adolescent offspring

February 24 2017



Credit: martha sexton/public domain

Here's some good news if you are female: Research published online in *The FASEB Journal*, shows that in mice, what is eaten during

adolescence or childhood development may alter long-term behavior and learning, and can even "rescue" females from the negative effects on behavior resulting from a poor maternal diet during pregnancy.

"These are provocative findings," said Thoru Pederson, Ph.D., Editor-in-Chief of *The FASEB Journal*. "So many effects during pregnancy have been touted as irreversible—perhaps not always so. "

In their study Reyes and colleagues used four groups of female mice. The first group was fed a control diet during pregnancy and lactation. The second group was fed a high-fat diet during pregnancy and lactation. The third was also fed a nutrient-enriched diet during [early life](#).

The fourth group included offspring from the mice fed a [high-fat diet](#) that were fed the nutrient-enriched diet during early life. When all mice were adults, they were fed the same [control diet](#) for the remainder of their lives.

Researchers then used operant behavior chambers (chambers in which a mouse must nose-poke into a hole to get a reward) to examine learning and motivation. They found that the female offspring who were fed the nutrient-enriched diet during early life learned faster and were more motivated to obtain the sugar reward.

Furthermore, the nutrient supplementation also reversed some of the deficits observed due to high-fat feeding during pregnancy.

More information: Sarah E. McKee et al, Methyl donor supplementation alters cognitive performance and motivation in female offspring from high-fat diet-fed dams, *The FASEB Journal* (2017). [DOI: 10.1096/fj.201601172R](https://doi.org/10.1096/fj.201601172R)

Provided by Federation of American Societies for Experimental Biology

Citation: Effects of a poor diet during pregnancy may be reversed in female adolescent offspring (2017, February 24) retrieved 18 April 2024 from

<https://medicalxpress.com/news/2017-02-effects-poor-diet-pregnancy-reversed.html>

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