

Depressed fathers pass depression to offspring but the cause is mostly behavioral, not genetic, or epigenetic

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(Medical Xpress) -- One of the first studies to examine, in animals, how depression in fathers may impact their offspring will be presented by the study's researchers from the University at Buffalo and Mt. Sinai School of Medicine at 10 a.m. on Nov. 16 at the annual meeting of the Society for Neuroscience.

A key purpose of the experiments was to determine if depressive-like behaviors in mice could be passed from one generation to the next. The authors also attempted to examine if epigenetics -- changes in the genome of an organism caused by something other than changes in [DNA sequences](#) -- might play a role in inheriting depression.

"It appears from our results that depression is passed on not through sperm primarily but through behavioral mechanisms," says David Dietz, PhD, assistant professor of pharmacology and toxicology in the UB School of Medicine and Biomedical Sciences and co-author of the study.

The researchers used a [rodent model](#) of depression, studying male mice who had been "socially defeated" through exposure to [chronic stress](#).

When those males bred offspring through natural methods, their offspring did show a susceptibility to exhibit [depressive symptoms](#), such as social avoidance.

However, when offspring were bred from these fathers through in vitro fertilization (IVF) and the fathers had no direct contact with the offspring or with the mothers, the susceptibility of the offspring to show depressive-like symptoms was greatly reduced.

"With the [offspring](#) of the IVF experiments, you definitely lost the very robust transmission of depression-like behaviors that we saw in the group bred through natural methods," says Dietz.

The research was previously published in the *Journal of Biological Psychiatry* by Dietz and his co-authors from the Mt. Sinai School of Medicine and Utrecht University in the Netherlands.

Provided by University at Buffalo

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