

## Evidence for inheritance of stress through epigenome found in sperm of mice

**The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion and analysis.**

In the past several years, it has become clear that parents' life experiences can [alter germ cells epigenetically](#), and that events in parents' lives can influence the health and behavior of their children and even grandchildren. But it can be difficult to establish a causal connection between epigenetic changes and changes in behavior and health. Researchers at the University of Pennsylvania led by Tracy Bale have now demonstrated that an increase in a group of microRNAs (miRNAs) in sperm from stressed mice can lead to altered stress response in adult offspring. The work, published in *PNAS*, shows that simultaneously injecting nine miRNAs into mouse zygotes recapitulates the changes found in the offspring of stressed mice.

[Oliver Rando](#), who studies paternal effects of diet in mammals at the University of Massachusetts Medical School but was not involved in the study, pointed out that the findings reinforce those of [another study](#) led by Isabelle Mansuy at the University of Zurich, Switzerland, which showed that injecting sperm RNAs into zygotes recapitulates the transgenerational effects of trauma. This latest study improves on the previous one by identifying specific miRNAs that transmit stress to offspring rather than injecting bulk sperm RNA, Rando said. Further, the new paper shows that injected miRNAs knock down expression of specific genes in zygotes. "That's probably the really killer addition of this paper relative to previous work," Rando said.

**Read full, original post:** [Sperm RNAs Transmit Stress](#)