

How a father's stresses alter sperm and can 'leave his children scarred'

A stressed-out and traumatized father can leave scars in his children. New research suggests this happens because sperm “learn” paternal experiences via a mysterious mode of intercellular communication in which small blebs break off one cell and fuse with another.

Carrying proteins, lipids and nucleic acids, these particles ejected from a cell act like a postal system that extends to all parts of the body, releasing little packages known as extracellular vesicles.

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[E]xtracellular vesicles can [regulate brain circuits](#) and [help diagnose neurodegenerative diseases](#)—in addition to altering sperm to disrupt the brain health of resulting offspring.

Striking evidence that harsh conditions affect a man's children came from crop failures and war ravaging Europe more than a century ago. In those unplanned human experiments, prolonged famine appeared to set off a host of health changes in future generations, including higher cholesterol levels and increased rates of obesity and diabetes.

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[By] analyzing sperm from [a] group of healthy young men, the researchers plan to build a basic understanding of molecular changes linked with mild stresses such as taking final exams. In the future [neurobiologist Tracy] Bale and colleagues hope to compare these baseline fluctuations with changes induced by more prolonged life stressors such as post-traumatic stress disorder or neurological diseases such as autism and schizophrenia.

Read full, original post: [How Dad's Stresses Get Passed Along to Offspring](#)