

Does smoking while pregnant harm babies' DNA?

Pregnant women who smoke don't just harm the health of their baby—they may actually impair their child's DNA, according to new research. The finding may explain why the children of smokers continue to suffer health complications later in life.

Babies born to smoking mothers tend to be smaller, have impaired lung function, and have a higher incidence of birth defects. Even as adults, these individuals exhibit health and behavioral problems, with those born to smokers being more likely to suffer from asthma, nicotine addiction, and substance abuse. "We have a limited understanding of the biological mechanisms for such effects," write genetic epidemiologist Christina Markunas and perinatal epidemiologist Allen Wilcox of the National Institute of Environmental Health Sciences in Research Triangle Park, North Carolina, in a joint e-mail to *Science*. One possibility is so-called epigenetic changes. Various environmental triggers—ranging from stress to diet—can chemically modify DNA, turning certain genes on or off.

The new study is one of the largest of its kind to investigate whether maternal smoking can cause such changes. Researchers analyzed blood collected from 889 infants shortly after delivery; approximately one-third of which were born to mothers who self-reported smoking during the first trimester. The team looked for chemical tags called methyl groups—just one of several types of epigenetic modifications to DNA.

Read the full, original story: [Smoking mothers may alter DNA of their children](#)