

The Virgin Islands Consortium

Marijuana, Already Proven To Lower Sperm Count, May Also Cause Genetic Changes To Sperm

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Studies have already concluded that marijuana use can lead to a lower sperm count, [disrupt the menstrual cycle](#), [lower sperm quality](#) and [make it harder to reach orgasm](#). Now, new research has found that the use of the drug, also known as cannabis, may actually cause genetic changes to the sperm itself, a finding that suggests serious implications for the health of a potential baby.

The study was [published on Wednesday](#) in the journal Epigenetics. Scientists at Duke University compared the sperm of two groups of rats: those who had been given tetrahydrocannabinol (THC), the psychoactive ingredient in cannabis, and those who had not, according to [The Verge](#). The scientists then compared the sperm of 24 human men

who smoked marijuana weekly versus a control group who used marijuana no more than 10 times in their life and not at all in the past half-year. In both cases — rats and humans — marijuana changed how genes work in sperm cells.

Susan Kay Murphy, a professor of gynecology at Duke and co-author of the study, explained to The Verge that a person's DNA can be described as being a list of instructions for making proteins, and genes as small subsets of that list. The human body has little chemical tags (called methyl groups) that get added to the DNA at specific regions. These chemicals don't mutate the genes themselves, but they do affect how they're used, like deciding which instructions are followed and which aren't.

In both rats and humans, the cannabis affected many different genes involved in two different pathways, which can be described as another set of instructions, this time for regulating various bodily functions. One is important for organs to reach full size, and one plays a role in cancer and suppressing tumors. "That just blows my mind," Ms. Murphy told The Verge. "How do you even reconcile that, biologically, an entire pathway is going to be affected by these changes?"

The results does not confirm that smoking cannabis will lead future children to be more vulnerable to cancer; Ms. Murphy was clear the study was a pilot originally intended to see if cannabis even has any genetic effect on sperm. The sample size is small, and they didn't control for the concentration of THC the human recruits smoked. However, the scientists did measure THC in the urine and noted that more THC in the urine correlated with more changes.

"This is a smaller study, but with concerning implications," says Bobby Najari, a urologist at NYU Langone who was not involved in the study, according to The Verge. Mr. Najari already counsels men who use marijuana regularly to cut back because of the effect on sperm count. "I think one of the important positive things about research like this is that it may further motivate men to change their health," he added. "It's one thing to talk about sperm count, another when you're talking about the potential health of the child."

The medicinal marijuana legislation sponsored by Senator Positive Nelson will be heard today in the Committee on Rules and Judiciary, where it is expected to win favorable approval from lawmakers. It is then expected to be on the Senate's agenda during a session scheduled for Friday. If successful there, the measure will be forwarded to Governor Kenneth Mapp and [could be signed into law before the governor leaves office in less than a month.](#)