Cocaine May Fuel HIV Acquisition and Its Spread Between Cells

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Cocaine may increase an individual's likelihood of acquiring HIV, by stimulating a pair of receptors on inactive CD4 cells, CBSNews.com reports. Also, the drug appears to fuel the spread of the virus from cell to cell. Publishing their findings in the Journal of Leukocyte Biology, researchers at the University of California, Los Angeles conducted a yearlong in vitro (laboratory) study in which they drew blood from HIV-negative participants and then isolated what are known as quiescent, or inactive, CD4 cells.

After exposing these cells to cocaine, the investigators put them in contact with HIV. Then they compared both the rate of infection and the mechanism by which cells were infected between the cocaine-exposed cells and cells that had been exposed to the virus but not the drug. Three days of cocaine exposure proved enough to make the cells more susceptible to infection.

"The surprising result was that the changes cocaine induced on these cells were very minimal, yet they were sufficient to fuel infection," the study's senior author, Dimitrios Vatakis, PhD, an assistant professor of medicine in the division of hematology–oncology at the David Geffen School of Medicine at UCLA, said in a release. "We found that cocaine mediates its effects directly, inducing minimal changes in the physiology of these cells and utilizing the same pathways it uses to target the brain."

The findings are limited by the fact that the research was not conducted in humans and also because typical cocaine users partake of the drug over a more extended period of time than three days. Among their plans for future research is an investigation into whether cocaine leads to a higher viral reservoir.

To read the CBSNews.com story, click here.

To read the UCLA release, click here.

To read the study abstract, click here.