Detecting the Missing Link Between HIV and Brain Drain

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Researchers at Georgetown University Medical Center have released data that HIV interferes with a protein that supports brain function. The news provides an important piece to the puzzle of why, even when the virus is successfully suppressed by HIV meds, some positive people still suffer a loss of cognitive function.

“This finding is extremely important,” says Georgetown’s Italo Mocchetti, PhD, “because it suggests a new avenue to understand, and treat, a fairly widespread cause of dementia.” The researchers, led by Mocchetti, found that gp120, an HIV fragment, disrupts the maturing of a protein called BDNF that protects neurons in the brain. In its immature state, the protein is toxic, possibly causing psychological and cognitive problems such as depression and loss of memory and motor function.

For HIV-positive people concerned about brain health, the research holds hope: Mocchetti believes certain drugs—made of molecules small enough to penetrate the blood-brain barrier—might block immature BDNF from doing its damage. The theory will be tested in mice, with the first stage expected to take about two years. “Then [if the concept proves viable],” Mocchetti adds, “we will use these mice to test small molecules.”

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