

HIV virus hides in the brain

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Studies of the spinal fluid of patients given anti-HIV drugs have resulted in new findings suggesting that the brain can act as a hiding place for the HIV virus. Around 10% of patients showed traces of the virus in their spinal fluid but not in their blood -- a larger proportion than previously realised, reveals a thesis from the University of Gothenburg, Sweden.

We now have effective anti-HIV drugs that can stop the [immune system](#) from being compromised and prevent AIDS. Although these drugs effectively prevent the virus from multiplying, the [HIV virus](#) also infects the brain and can cause damage if the infection is not treated.

"Antiviral treatment in the brain is complicated by a number of factors, partly because it is surrounded by a protective barrier that affects how well medicines get in," says Arvid Eden, doctor and researcher at the Institute of Biomedicine at the Sahlgrenska Academy. "This means that the brain can act as a reservoir where treatment of the virus may be less effective."

The thesis includes a study of 15 patients who had been effectively medicated for several years. 60% of them showed signs of [inflammation](#) in their spinal fluid, albeit at lower levels than without treatment.

"In another study of around 70 patients who had also received anti-HIV drugs, we found HIV in the spinal fluid of around 10% of the patients, even though the virus was not measurable in the blood, which is a significantly higher proportion than previously realised," explains Eden.

The results of both studies would suggest that current HIV treatment cannot entirely suppress the effects of the virus in the brain, although it is not clear whether the residual inflammation or small quantities of virus in the spinal fluid in some of the patients entail a risk of future complications.

"In my opinion, we need to take into account the effects in the brain when developing new drugs and treatment strategies for [HIV infection](#)," says Eden.

HIV, [human immunodeficiency virus](#), belongs to the retrovirus family and takes two forms, HIV-1 and HIV-2, which can be transmitted through blood, semen and other secretions and bodily fluids. In the acute phase, patients suffer from fever, swollen lymph glands and rashes. These symptoms do recede, but AIDS develops after a long period of infection. Attempts to produce an [HIV](#) vaccine have been ongoing since the 1980s, but have yet to be successful.

Provided by University of Gothenburg

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