

# HIV drugs might help prevent multiple sclerosis, large new study suggests

December 21 2023, by Kyla McKay and Elaine Kingwell

---



Credit: Unsplash/CC0 Public Domain

Over the last decade, [several case studies](#) have reported that people with multiple sclerosis (MS) who started antiretroviral therapy for HIV (to keep the virus in check) subsequently found that their MS symptoms had

either disappeared completely or the disease progression had slowed considerably.

These findings compelled researchers to ask whether HIV or antiretrovirals could influence the risk of developing MS. According to our [latest study](#), published in *Annals of Neurology*, the answer is yes.

It's very difficult to be certain if HIV or [antiretroviral drugs](#) might affect MS because large groups of people living with HIV, with detailed medical information on both HIV and MS, must be followed for a long period.

[Three studies](#) previously asked this question but had either too few patients or no access to information on [antiretroviral treatment](#). Consequently, earlier studies have not provided definitive answers.

For this study, we used large population-based health databases and clinical HIV and MS registries. They included virtually every person in British Columbia, Canada and Sweden who was medically recognized as HIV-positive dating back to 1992 in Canada and 2001 in Sweden.

We followed people with HIV from the first date that their HIV infection was recognized until the end of the study period (2020 in Canada and 2018 in Sweden). New diagnoses of MS during this period were searched for using data from hospitals and doctors, as well as information captured from specialist MS clinics.

The rate of new MS cases among people with HIV was compared to the rate of new cases in the [general population](#) within each region to determine if there truly was a different risk of MS in people with HIV.

We identified over 29,000 people with HIV and followed them for an average of nearly ten years. Over this period, only 14 HIV-positive

people developed MS, which was 47% fewer cases than expected based on numbers in the general population.

When we looked specifically at people who had taken antiretroviral drugs (nearly everyone in the study), and only after they started antiretroviral therapy, we found 45% fewer MS cases than expected. In other words, we found a [reduced risk](#) among people who were HIV-positive and had used antiretroviral therapy.

The risk of MS was most significantly reduced for women, with a reduction of 72%. There were also fewer men developing MS in the HIV population than expected, but the difference in risk was less pronounced in men than in women.

## **Possible biological explanation**

From the results of this study alone, it is not possible to tell whether the virus or the [antiretroviral therapy](#) might be responsible for the reduction in MS risk. However, there are biological reasons to support both theories.

HIV leads to a progressive loss of immune cells called CD4<sup>+</sup> T cells. These same cells are implicated in MS, as they initiate the cascade of events that leads to inflammation of the brain and spinal cord. By reducing CD4<sup>+</sup> T cell counts, infection with HIV could reduce the likelihood of a person developing MS.

The finding that MS risk was lower when the HIV virus is presumably suppressed by antiretroviral drugs, though, might offer some hope that it is the treatment rather than the virus that plays a role.

Possible mechanisms for the effectiveness of antiretrovirals in reducing MS risk and disability include the inhibition of the Epstein-Barr virus.

More and more research is accumulating to highlight the important role of Epstein-Barr in MS.

The antiviral properties of HIV therapy might limit Epstein-Barr virus activity, thereby minimizing both the risk of getting MS and of the disease progressing in those who have it.

The finding that HIV infection or antiretrovirals confer a protective effect against MS holds the potential to broaden our understanding of the causes of MS and how the disease damages the body.

Although treatments are available for the relapsing form of MS, none can halt the persistent progression seen later in the disease. Findings from this study might encourage a more concerted effort to determine whether [antiretroviral](#) drugs could slow MS disease progression.

With limited research resources, this approach could yield a more immediate benefit, addressing the major unmet need to develop better treatments aimed at preventing or slowing the progression of MS.

**More information:** Kyla A. McKay et al, Risk of Multiple Sclerosis in People Living with HIV: An International Cohort Study, *Annals of Neurology* (2023). [DOI: 10.1002/ana.26840](https://doi.org/10.1002/ana.26840)

This article is republished from [The Conversation](#) under a Creative Commons license. Read the [original article](#).

Provided by The Conversation

Citation: HIV drugs might help prevent multiple sclerosis, large new study suggests (2023, December 21) retrieved 20 June 2024 from <https://medicalxpress.com/news/2023-12-hiv-drugs->

[multiple-sclerosis-large.html](#)

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.