

# Study: Antiretroviral therapy crucial in preventing non-Hodgkin lymphoma

March 21 2019, by Michael Greenwood

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HIV infecting a human cell. Credit: NIH

A research team led by the Yale School of Public Health has found that

for people living with HIV/AIDS, both recent immunosuppression (a low recent CD4 T-cell count [white blood cells that fight infection]) and prolonged HIV viremia (the presence of HIV in the blood) play important and independent roles in the development of non-Hodgkin lymphoma. Furthermore, the team observed differences across non-Hodgkin lymphoma subtypes.

The study is believed to be the largest to comprehensively evaluate a variety of measures of T-cell count and viral load to determine the key predictors of risk for non-Hodgkin lymphoma, both overall and by its subtypes. Since the early days of the AIDS epidemic, HIV infection has been strongly associated with the development of two types of cancer: non-Hodgkin lymphoma and Kaposi sarcoma.

The study, published in *The Lancet HIV* journal, examined people living with HIV from 1996 to 2014 from the United States and Canada, comprising more than 100,000 individuals, of which 712 patients were diagnosed with non-Hodgkin lymphoma. Using models, researchers solidified earlier evidence suggesting that recent T-cell count and cumulative viral load both play important and independent roles in the development of non-Hodgkin lymphoma, and generated new evidence regarding their roles in the development of non-Hodgkin lymphoma subtypes.

"Our finding that prolonged HIV viremia is an [independent risk factor](#) for non-Hodgkin lymphoma reinforces the importance of early diagnosis of HIV infection followed by prompt initiation of [antiretroviral therapy](#) (ART)," said Raul U. Hernandez-Ramirez, Ph.D., an associate research scientist in biostatistics at the Center for Methods in Implementation and Prevention Science at the Yale School of Public Health. "Curtailling chronic HIV viremia and restoring immune function with early and sustained ART is crucial for preventing non-Hodgkin lymphoma."

Despite the sharp decline in the risk for non-Hodgkin lymphoma in people living with HIV after the introduction of effective ART, risk for those patients is still substantially higher than in the [general population](#), most likely because of late HIV treatment initiation and because the treatment does not completely restore immunological health, said Hernandez-Ramirez. Moreover, the incidence trends and the principal reasons for the increased risk for non-Hodgkin lymphoma vary by subtype. Therefore, additional efforts aimed at optimizing early HIV diagnosis and prompt and sustained HIV treatment are warranted to further prevent overall non-Hodgkin lymphoma. Additional research is needed as well to better understand the etiology of each subtype of non-Hodgkin [lymphoma](#).

**More information:** Raúl U Hernández-Ramírez et al. Association of immunosuppression and HIV viraemia with non-Hodgkin lymphoma risk overall and by subtype in people living with HIV in Canada and the USA: a multicentre cohort study, *The Lancet HIV* (2019). [DOI: 10.1016/S2352-3018\(18\)30360-6](#)

Provided by Yale University

Citation: Study: Antiretroviral therapy crucial in preventing non-Hodgkin lymphoma (2019, March 21) retrieved 5 May 2024 from <https://medicalxpress.com/news/2019-03-antiretroviral-therapy-crucial-non-hodgkin-lymphoma.html>

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