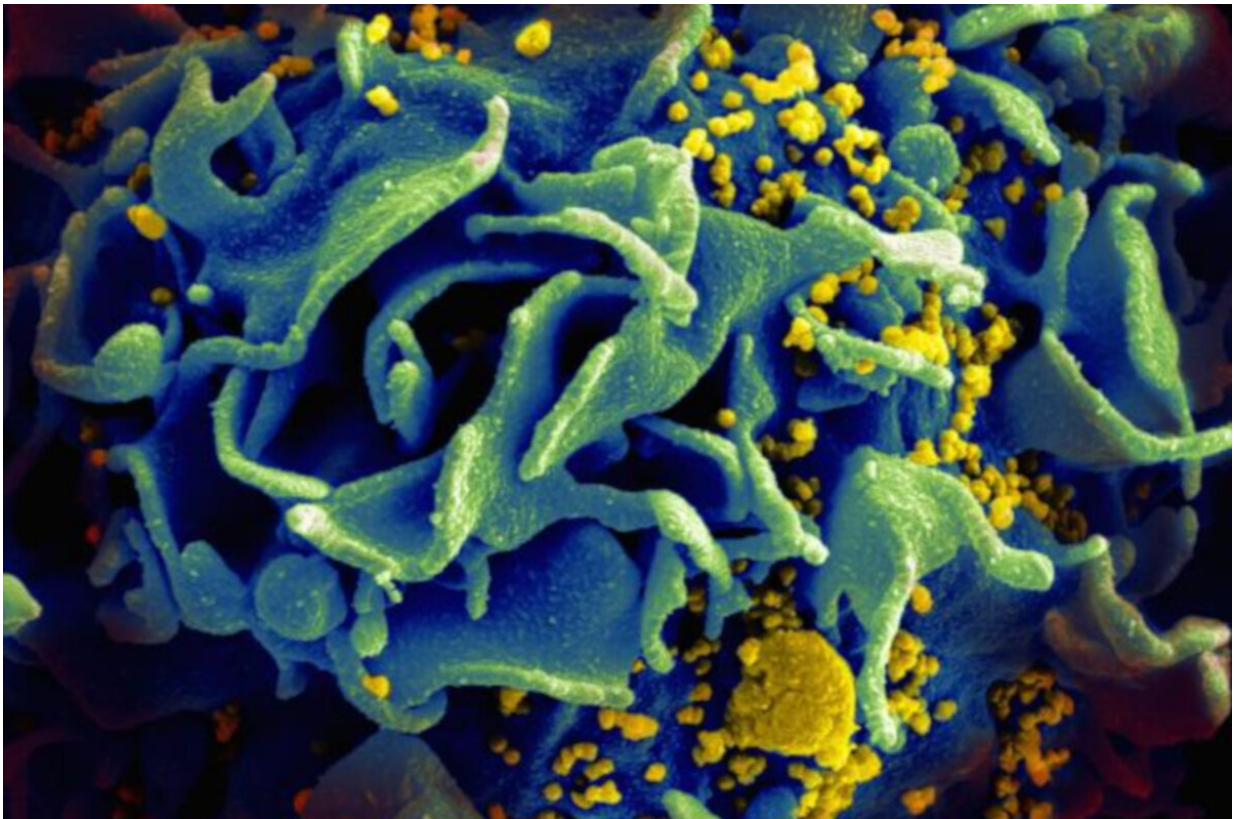


# Even with early treatment, HIV still attacks young brains, study says

December 18 2019

---



Microscopic image of an HIV-infected T cell. Credit: NIAID

The vast majority of children living with HIV today are in sub-Saharan Africa. While early antiretroviral therapy, or ART, has ensured less deadly outcomes for children living with and exposed to HIV, studies

show the virus still may affect the brain. HIV may disrupt neurodevelopment, affecting how children learn, reason and function.

That's why Michael Boivin, professor and director of the Psychiatry Research Program in the Michigan State University College of Osteopathic Medicine, set out to understand exactly how HIV impacts children's neuropsychological development in a two-year [longitudinal study](#), published in *Clinical Infectious Diseases*.

The research was supported in part by the National Institute of Allergy and Infectious Diseases, part of the National Institutes of Health.

Boivin and his colleagues evaluated the neuropsychological development of three groups of children aged 5 to 11: those who acquired HIV perinatally and were treated with ART, those exposed but HIV-negative, and those who were never exposed. The research took place at six study sites across four countries in sub-Saharan Africa for a robust view of how HIV is affecting children in the region.

To date, it's the first well-validated, multi-site neuropsychological evaluation of African school-aged children affected by HIV.

What the researchers discovered through various assessments was that even in the face of early treatment and good clinical care, there are still significant neuropsychological problems for children living with HIV.

"These children came into the study with a deficit compared to their counterparts," Boivin said. "It stayed about the same throughout the two years, except in one important area: reasoning and planning. On that specific test domain, the children living with HIV failed to progress over time."

In other words, the gap between infected and HIV-negative children

grew in the planning and reasoning area over the study period. Typically, these abilities tend to blossom in the school-aged years in healthy children.

"This is the most important cognitive function for the future of children living with HIV in terms of their likelihood of taking their medications, making good decisions, abstaining from risky behaviors like early sexual activity, psychosocial issues and school-related achievement," Boivin said.

The bottom line? Early medical treatment, started as early as 6 months of age, is probably not enough to address the neurocognitive deficits associated with HIV, even though it helps keep children alive and healthier than they would be without treatment. In these children, treatment should be started even earlier to improve long-term neurocognitive outcomes.

"We're going to have to complement the long-term care and support with actual behavioral interventions," Boivin said.

That's something Boivin and his colleagues are already working on. Earlier this year, Boivin received a 5-year, \$3.2 million NIH grant to continue his work with [children](#) affected by HIV in Uganda and Malawi.

Through this grant, researchers will investigate how MSU-developed computer cognitive games can serve as tools for neurocognitive evaluation, enrichment and potentially rehabilitation.

Boivin hopes that the results of both of these studies will help make this model of neuropsychological evaluation a considered part of the cost benefit of care for kids affected by HIV.

"Often it's overlooked or seen as an afterthought, but unlike other areas

of medical follow up, neuropsychological evaluation really gets at how well the kids are going to adapt and function in school, at home, in the community and in society in general," Boivin said. "It's really what links us most directly to the human burden of disease."

Provided by Michigan State University

Citation: Even with early treatment, HIV still attacks young brains, study says (2019, December 18) retrieved 19 April 2024 from <https://medicalxpress.com/news/2019-12-early-treatment-hiv-young-brains.html>

<p>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.</p>
--