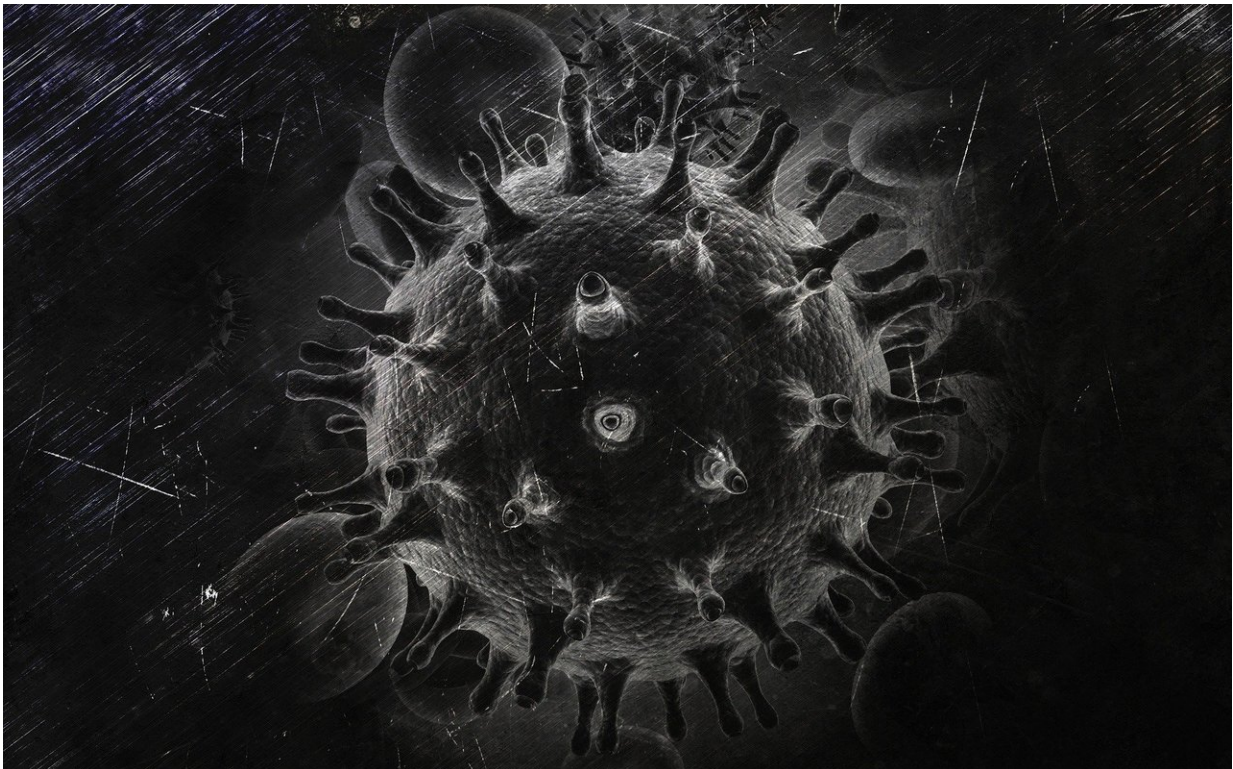


# Treg cells protect babies from getting HIV infection from their mothers

June 10 2018

---



Credit: CC0 Public Domain

Scientists now report that Treg cells, a type of regulatory lymphocyte, may be protecting babies in the womb from getting infected with the HIV virus when the mother is infected. The research, from the Emory Vaccine Center, is presented at ASM Microbe, the American Society for

Microbiology's annual meeting, held from June 7th through 11th in Atlanta, Georgia.

"Finding out what protects the majority of babies is important, as it can lead to ways to boost natural immune responses and make individuals resistant to HIV infection, said Peter Kessler, laboratory intern with the Emory University School of Medicine. Scientists had been puzzled for years by the fact that only a minority of babies born to mothers with HIV infection get the infection from their mothers. Currently, HIV infection can be successfully managed with antiretroviral drugs, but these drugs have to be given for life. Preventing the infection is very important, but there is no vaccine available yet.

Kessler and his colleagues from the Emory Vaccine Center found that levels of Treg lymphocytes were higher in the blood of newborn babies born to mothers with HIV infection who had escaped the infection themselves, compared with babies who were born with HIV infection.

Lymphocytes are [cells](#) of the immune system that protect the body by fighting bacteria and viruses. Treg cells, or regulatory T cells, are an important "self-check" in the immune system to prevent excessive immune reactions that could lead to tissue damage.

The researchers examined the blood of 64 babies who were born HIV-uninfected and 28 babies born HIV-infected and found that Treg cell levels were higher in uninfected babies at the time of birth. In contrast, other lymphocyte types were activated and higher in HIV-infected infants. The HIV virus can only infect cells that are activated, so Treg may protect from HIV [infection](#) by suppressing activation of other lymphocytes.

They analyzed the stored blood by flow cytometry, a technique that can differentiate between the different types of cells based on what markers

they express on their surface. Regulatory T cells come in many forms with the most well-understood being those that express the markers CD4, CD25, and FOXP3.

"Even though the number of babies studied is relatively small, these findings indicate that Treg, by controlling immune activation, may lower the vulnerability of the babies to HIV or other chronic infections even before they are born," said Kessler. These results could pave the way for the development of vaccines or other immune-based therapies that could be used together with medications to prevent the spread of HIV or other infections from mothers to their babies.

A poster highlighting their work will be presented by Peter Kessler at the ASM Microbe 2018 meeting in Atlanta, GA, on June 10, 2018, 12:45-2:45 pm. The mothers and babies in this study were part of a CDC-funded clinical study in Malawi that looked at ways to prevent the spread of HIV from mothers to their [babies](#) during childbirth and breastfeeding.

Additional authors on this study are Surinder Kaur and Chris Ibegbu from the Emory Vaccine Center

Provided by American Society for Microbiology

Citation: Treg cells protect babies from getting HIV infection from their mothers (2018, June 10) retrieved 25 April 2024 from

<https://medicalxpress.com/news/2018-06-treg-cells-babies-hiv-infection.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>
--