

Can Human Milk Prevent HIV?

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HIV can be transmitted through human milk, from mother to child during [breastfeeding](#). But the latest recipient of a [Campbell Foundation](#) grant is exploring whether human milk can also prevent [HIV](#).

“It is evident that although human milk is a vehicle for HIV transmission, its virus-killing properties are significant,” Rebecca Powell, PhD, an assistant professor of medicine at the Icahn School of Medicine at Mount Sinai in New York City, said in a [Campbell Foundation press release](#).

Powell is leading several studies looking at the immune properties of human milk as it relates to HIV. To support her [HIV research](#), The Campbell Foundation awarded her an \$84,235 grant.

Globally, about 100,000 children contract HIV from breast milk each year, according to the Campbell statement. However, a much larger number of infants who are breastfed by an HIV-positive mother do not acquire the virus. In fact, about 15% of these infants remain HIV negative.

Earlier research on the topic has shown that milk leukocytes—a type of white blood cell that fights foreign substances—can “engulf and destroy HIV that has been coated in an anti-HIV antibody,” according to the Campbell statement. This ability is referred to as antibody-dependent cellular phagocytosis (ADCP).

“In milk, we have identified unique subsets of leukocytes that can perform ADCP of HIV, in the ‘monocyte’ lineage, that do not conform to any classical blood monocyte profile. These cells are generally small (blast-like) and lack expected cell-surface markers. This finding demonstrates that human milk monocytes must be comprehensively examined and defined to further the field’s knowledge such that these potential vehicles of and defenders against transmission of HIV can be targeted therapeutically,” Powell said in the Campbell statement.

“Milk immunology is still a relatively understudied area, but one that has great potential,” added Campbell Foundation executive director Ken Rapkin. “Dr. Powell and her team have been at the forefront of this type of research, which one day may be used to develop vaccines.”

Breast milk is only one of several body fluids via which HIV is transmitted. The others are:

- Blood
- Semen
- Pre-cum
- Rectal fluids
- Vaginal fluids
- Breast milk.

There are several ways these fluids can transmit HIV:

- From unprotected vaginal/frontal or anal sex with someone with HIV who has a detectable viral load (and when the HIV-negative person is not taking pre-exposure prophylaxis, or PrEP).
- From sharing needles, syringes or other injection equipment with someone who has HIV while not using PrEP.
- From mother to child during pregnancy, childbirth or breastfeeding. However, if the mother is in regular care and on HIV treatment, this risk is reduced to nearly zero.
- From being stuck with a needle or cut with a sharp object that contains HIV-positive blood. This is mostly a risk for health care workers.
- From getting a blood transfusion. However, this risk is low in the United States.

HIV is not transmitted through saliva, urine, feces, vomit, sweat, animals, bugs or the air. Therefore, you are NOT at risk for HIV if you:

- Are bitten by a mosquito or any other bug or animal.
- Are near a person who is HIV positive and sneezed.
- Eat food handled, prepared or served by a person who is HIV positive.

- Share toilets, telephones or clothing with a person who is HIV positive.
- Share forks, spoons, knives or drinking glasses with a person who is HIV positive.
- Touch, hug or kiss a person who is HIV positive.
- Attend school, church, restaurants, shopping malls or other public places where there are people who are HIV positive.

To learn more, see the [POZ Basics on HIV Transmission Risks](#).

The Campbell Foundation, which will celebrate 28 years of operation this year, funds nontraditional laboratory-based HIV research. It has awarded over \$11.5 million over the years. To read about research grants it awarded last year, see “[Can HIV Mutate and Escape CAR-T Gene Therapy Developed as a Cure?](#)” and “[How Does HIV Persist for Decades in People on Antiretrovirals?](#)”

To learn more about organizations that support HIV causes, see “[Guess Who’s the New No. 1 Philanthropic Funder of HIV Programs](#),” which was one of the most popular articles of 2022. To see which other stories drew the most page views last year, check out “[2022 Top HIV News Stories](#).”