

# Probability in human immunodeficiency virus type 1-infected mothers.

[Richardson BA](#), [John-Stewart GC](#), [Hughes JP](#), [Nduati R](#), [Mbori-Ngacha D](#), [Overbaugh J](#), [Kreiss JK](#).

## Abstract

Human immunodeficiency virus type 1 (HIV-1) is transmitted through blood, genital secretions, and breast milk. The probability of heterosexual transmission of HIV-1 per sex act is .0003-.0015, but little is known regarding the risk of transmission per breast-milk exposure. We evaluated the probability of breast-milk transmission of HIV-1 per liter of breast milk ingested and per day of breast-feeding in a study of children born to HIV-1-infected mothers. The probability of breast-milk transmission of HIV-1 was .00064 per liter ingested and .00028 per day of breast-feeding. Breast-milk infectivity was significantly higher for mothers with more-advanced disease, as measured by prenatal HIV-1 RNA plasma levels and CD4 cell counts. The probability of HIV-1 infection per liter of breast milk ingested by an infant is similar in magnitude to the probability of heterosexual transmission of HIV-1 per unprotected sex act in adults.