

# Mothers and Babies and HIV

## What is the Risk of Breastfeeding?

an article by  
Pamela Morrison  
IBCLC



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## **MOTHERS AND BABIES AND HIV: WHAT IS THE RISK OF BREASTFEEDING?**

PAMELA MORRISON, IBCLC (Updated: January 2002)

1. The exact frequency of breastmilk HIV transmission during the course of lactation remains unknown. Current international guidelines [UNAIDS 1998] state that the additional risk of mother to child transmission of HIV through breastfeeding (over and above that occurring in utero or during labour/delivery) is "about 15%". This figure comes from a meta-analysis [Dunn et al 1992] of 42 women with new infections and 1772 women with established infection. The majority of the women had breastfed for only 2 - 4 weeks and only 106 women breastfed longer than 6 months. The additional risk of transmission from breastmilk was estimated at 14% with established infection and 29% among newly infected women.
  2. The limits inherent in current testing techniques prevent identification of the HIV-infected infant at the time of birth. It remains speculative to say that breastfeeding provides the route of transmission in a breastfed baby who subsequently tests positive in the early postpartum [Black 1996] particularly since a baby who is not breastfed may test negative on PCR at birth and yet test positive any time in the next 90 days [Bagasra 1998].
  3. The degree of exclusivity of breastfeeding in many case reports is unknown and the definition of "breastfed" children, even in populations where breastfeeding is routinely practised, almost certainly means babies who were, in fact, only partially breastfed. The protective effects of breastfeeding against ANY disease are known to be enhanced by increased exclusivity and longer duration of breastfeeding. Exclusive breastfeeding facilitates enterocyte junction closure of the intestinal mucosal barrier. This decreases exposure to dietary antigens and environmental pathogens which occur with premature introduction of other foods and liquids (and formula), which in turn cause intestinal irritation and inflammation, to allow direct contact of the virus with the infant's bloodstream [Smith & Kuhn 2000, Morrison 1999]. Studies conducted in South Africa [Coutsoudis 1999, 2000, 2001(c)] confirm that at 3 months the overall rate of transmission of HIV to babies who had been exclusively breastfed was 14.6%, whereas 18.8% of babies who had never been breastfed had become infected. Babies who received both breastmilk and formula had the highest rate of transmission (24.1%). By 6 months, babies who had been exclusively breastfed for 3 months still had lower rates of infection (18%) than never breastfed (19%) or mixed fed babies (26%).
  4. Re-analysis of the infant mortality risks associated with not breastfeeding in the first year of life in three developing countries, [WHO Collaborative Study Team, 2000] found that the risk of death for infants under 2 months from infectious disease was 6 times as likely if they were not breastfed; 4.1 times as likely from 2 - 3 months, and 2.6 times as likely from 4-5 months. The relevance of these risk estimates for HIV+ mothers was identified.
  5. An East African study showed that mortality at 2 years between babies of HIV-infected mothers randomized to breast or formula feeding was 24% and 20% respectively, a difference that was not considered to be statistically different, demonstrating that there was no child survival advantage when breastfeeding was withheld. [Nduati et al, 2000]
  6. The same East African group recently reported that the maternal mortality rate of HIV-infected breastfeeding mothers exceeded that of the formula feeding mothers [Nduati 2001]. However close scrutiny of the data shows that although randomization was generated by computer, more mothers assigned to the breastfeeding arm had STDs, particularly syphilis, and low levels of vitamin A. They were also more likely to have had C-sections, episiotomies, rupture of membranes greater than 4 hours before birth, have suffered miscarriages or stillbirth, and a higher percentage of their babies were shown to be already infected at birth. No difference in mortality rates between mothers who were breastfeeding, mixed feeding or not breastfeeding at all were found in the South African study [Coutsoudis 2001(d)].
- SUMMARY:** Although early research appears to show that breastfeeding increases the risk of mother-to-child transmission of HIV, more recent studies which clearly define "breastfeeding" show no additional risk of MTCT of HIV through exclusive breastfeeding over not breastfeeding at all. In addition, there is no difference in the overall mortality rate at 2 years between children of HIV+ mothers randomized to breast

or bottle feeding. Since infant morbidity and mortality are greatly enhanced whenever breastfeeding is abandoned, particularly in resource-poor settings, it follows that public health measures which seek to maximize child survival should continue to promote exclusive breastfeeding for the first half year of life, and continued breastfeeding with the addition of household weaning foods for up to two years or beyond, notwithstanding maternal HIV status.

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Updated in January 2002 by:  
PAMELA MORRISON, IBCLC  
Harare, Zimbabwe  
email: pamela@ecoweb.co.zw

