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Exclusive breastfeeding and HIV

Promotion of breastfeeding has been ranked as the most cost-effective intervention for child survival, and could prevent 13–15% of child deaths in low-income countries.^{1–3} But in some circumstances, breastfeeding can transmit HIV, which presents a terrible dilemma for parents and policymakers. UNAIDS estimates that over 300 000 children are infected with HIV through breastfeeding every year. To weigh the risks we need good data, but such research is fraught with difficulties. Hoosen Coovadia and colleagues' meticulous prospective study in KwaZulu-Natal, South Africa, published in today's *Lancet*,⁴ is a breakthrough. It provides crucial confirmatory evidence that when HIV-positive mothers breastfeed exclusively, their babies have only a low risk of infection with HIV. This risk is lower than that in babies who receive other food or liquids in addition to breastmilk before 6 months of age. Mixed feeding before or after 14 weeks nearly doubled transmission risk and the addition of solids increased the risk 11-fold.

Importantly, Coovadia and colleagues also reported that mortality by 3 months of age for replacement-fed babies was more than double that of those who were exclusively breastfed. This result adds to the accumulation of new evidence on the hazards of formula feeding.⁵ An investigation of a serious outbreak of diarrhoea in Botswana in 2006 showed that 93% of the infants admitted to hospital were not breastfeeding, and these children had the greatest risk of dying.⁶

Earlier estimates that the risk of postnatal transmission is between 10% and 20% did not distinguish between exclusive and mixed breastfeeding.^{7,8} In 1998, the first report that exclusive breastfeeding might reduce the risk

came from a vitamin A trial in South Africa.⁹ In 2005, a large trial in Zimbabwe showed that HIV transmission with mixed feeding was more than three times that with exclusive breastfeeding by 6 months of age.¹⁰ Although also observational, Coovadia and colleagues' study is the first in which measurement of transmission by feeding method was the primary aim. Ironically, success in assisting women to breastfeed exclusively was greater than expected, resulting in the mixed-fed group being too small for multivariate regression analyses to account for potential confounders. However, careful collection and management of data, classification of feeding status, and frequent follow-up, allowed accurate timing of both HIV-1 transmission and changes in feeding. These factors and the large sample provide confidence that exclusive breastfeeding protects against HIV transmission. Both the study result and the success of counselling have policy implications because they show not only the effectiveness but also the feasibility of this intervention.

Coovadia and colleagues' findings enable infant feeding guidelines for HIV-positive pregnant women to be refined.¹¹ However, the results also emphasise that promotion of exclusive breastfeeding for all mothers and babies could prevent much paediatric HIV infection as well as deaths from other causes. Even where testing is available, many women remain unaware of their HIV status. Furthermore, women often become infected late in pregnancy and during breastfeeding,^{12,13} and the risk of transmission to their baby is then especially high because of the peak in viral load after infection.¹⁴

Exclusive breastfeeding is uncommon in most societies. It is easily undermined not only by the marketing efforts of formula manufacturers, but also by

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a wide range of traditional and modern cultural beliefs and poor health-care practices. Other foods and drinks are often given to infants in the first days and weeks of life because of anxiety about milk supply or pressures to work outside the home.

In Coovadia and colleagues' study, 82% of mothers breastfed exclusively for at least 6 weeks, and 67% for at least 3 months. They received skilled support from well trained, lay infant-feeding counsellors. As many as ten randomised trials in varied settings have found this approach effective.³ Counsellors need training, management, support, and supervision,¹⁵ and health-care services need strengthening to provide this intervention. Health workers should be adequately informed and able to give mothers appropriate help—currently they are not. Furthermore, there is a need for community education to reach men and older women, who influence infant-feeding decisions. These activities also provide opportunities to protect breastfeeding women from becoming infected with HIV.

The increased resources now available to prevent HIV infection in children should be invested in ways that also improve maternal and child health in general. But

very little is earmarked for promotion of breastfeeding. Investment in promoting, protecting, and supporting exclusive breastfeeding to 6 months has the greatest potential to improve HIV-free child survival in settings with both high and low HIV prevalence.

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