

Feeding infants whose mothers are HIV-positive

Feeding from birth to 6 months

The way a HIV+ mother feeds her baby affects the child's risk of:

- Becoming infected with HIV
- Dying from other infections.

Table 1 shows that the risks to the baby of exclusive breastfeeding (i.e. being infected with HIV) must be balanced against the risks of giving infant formula (i.e. dying from other infections and malnutrition). In Southern Sudan most families cannot safely formula feed. The milk is expensive and making hygienic feeds is difficult.

So the safest choice for most babies born to mothers with HIV is exclusive breastfeeding for

the first 6 months. Among the many well-known advantages of breastfeeding is the reduction of HIV-associated stigma.

The risks of transmission during exclusive breastfeeding in the first 6 months are:

- Decreased when:
 - the mother and/or baby are on ART
 - the baby really *does not have anything* else to eat or drink.
- Increased when:
 - the mother has AIDS, a low CD4 count, cracked nipples, mastitis or a breast abscess or is infected with HIV immediately before or during breastfeeding
 - the baby has mouth sores.

Table 1 Approximate risk of 0-6 month old babies whose mothers are HIV+ becoming HIV infected or dying from other infections in low-income areas¹

Type of feeding	Risk of postnatal HIV infection	Risk of dying from other infections
Exclusive breastfeeding	Low	Very low
Infant formula only	Nil	Very high
Breastfeeding + formula	High	Medium
Breastfeeding + food	Very high	Medium

Note: Infant formula, animal milks and family foods can irritate and inflame the gut so that HIV can more easily invade the body.

Counselling

Before a baby is born make sure that both parents, and/or other relatives and caretakers (as well as any health promoters giving advice) understand:

- The risks, costs and advantages of different feeding methods
- That, except for breastmilk, **any food or drink** taken before the age of 6 months may injure the baby's young gut in different ways and cause diarrhoea, allergies, etc.
- That mixed feeding (i.e. breastmilk with any other food, drink or formula) is the worst option as HIV can easily invade an injured gut.

Exclusive breastfeeding

- At antenatal visits: emphasise:
 - the importance of **exclusive** breastfeeding for 6 months and the dangers of mixed feeding.
 - that all lactating mothers, especially those who are HIV+, have high energy and nutrient needs and so must eat more healthy foods than usual.
- After delivery:

- check that the baby is suckling in the correct position as this lessens the risk of breast-related problems. If these occur (e.g. cracked nipples, engorgement, mastitis) tell the mother to seek treatment quickly
- teach the mother how to identify thrush and mouth sores in the baby. If these occur treat immediately with gentian violet or nystatin cream
- advise the mother not to force breastfeeding if the baby refuses but to seek advice. The baby may be sick or have a congenital problem. Check the baby and ask if s/he has the normal cycle of 'suckle-sleep-cry-suckle-sleep' or has an abnormal cry and sleeping cycle.

Replacement feeding

If the mother decides not to breastfeed *and* the family is able to buy and safely prepare sufficient amounts of a suitable breastmilk substitute:

1. Make sure that mother and her family know:
 - The dangers of mixed feeding (i.e. breastmilk + other milk and/or food).

- That infant formula provides a better balance of nutrients (including micronutrients) than home-modified animal milks. Sweetened condensed milk and undiluted animal milks are not suitable for feeding babies under 6 months.
 - How to safely prepare the feeds and feed with a cup.
2. Follow up and monitor the child's weight often, especially during the first weeks. Tell the family to seek early treatment if the baby is ill.
 3. Advise the parents about family planning. If the mother breastfed previous infants, she may not realise that artificial feeding puts her at risk of another pregnancy sooner.

If the mother is dead or severely ill, try to provide the family with infant formula, demonstrate how to prepare and feed it, and monitor the baby as closely as possible.

Feeding from 6 – 12 months

Recent studies indicate that for many babies in resource-poor homes stopping breastfeeding carries a higher risk of death (from infection and malnutrition) than continuing to breastfeed². They also suggest that the risk is transmission is lower if the mother and baby are on ART^{3,4}.

Counselling

At the age of 6 months all children need other (complementary) foods in addition to breastmilk or formula – see Box 1.

If the infant is breastfeeding

1. If the infant is HIV+, advise starting complementary foods and continuing to breastfeed until the child is at least 2 years old.
2. If you do not know the HIV status of an HIV-exposed breastfeeding infant, assume s/he is HIV- and discuss different feeding options. *Only* advise stopping breastfeeding at 6 months if:
 - The baby is well and can be weighed regularly
 - The family can:
 - provide sufficient suitable milk as well as other foods and can prepare them safely.
 - reach a health centre quickly if the baby is ill or not gaining weight.

For many infants the safest choice may be to start complementary/family foods (see Box 1) and continue breastfeeding until 12 months of age and then stop. At this age the risk of death from diarrhoea and common infections decreases.

If the infant is not breastfeeding

Make sure the family knows:

- That non-breastfed babies are at risk of serious infections and malnutrition. They should take

the infant for regular weighing/health checks and seek medical help quickly if the child is ill or not gaining weight

- How to feed the infant – see Box 1.

Box 1. Feeding infants aged 6-12 months⁵

All infants have small stomachs and need to eat energy/nutrient-rich meals or snacks about 4-6 times a day, in addition to some type of milk. As well as thick porridges they need:

- **Meat, poultry, fish or eggs** whenever possible.
- **Legumes (e.g. beans) and oil seeds (e.g. groundnuts)**
- **Plenty of fruits and vegetables**
- **Fat-rich foods** (e.g. oil, groundnuts) that provide about 1-2 tablespoons fat/day

If children are not breastfed they also need:

- **Full-fat milk** 300 – 500 ml of boiled (or safely fermented/soured) animal milk each day.

All infants need regular vitamin A supplements, some need iron and HIV-exposed infants many need food supplements.

References

1. Greiner T. in *Chapter 7, Community Nutrition*. Chapter 7, Macmillan, Oxford 2009.
2. Kuhn L et al *Effects of early, abrupt weaning on HIV-free survival of children in Zambia*. N Engl J Med, 359(2): 130-41. <http://www.womenchildrenhiv.org/wchiv?page=wx-resource&rid=21034> 2008
3. Smart T. *Low rates of HIV transmission in breastfeeding women on ART*. 4th International AIDS Society Conference on HIV Pathogenesis, Treatment and Prevention in Sydney. www.aidsmap.com 2007.
4. Thaczuk D. & Safreed-Harmon K. *ART use in mothers with low CD4 cell counts reduces breastfeeding transmission fivefold: Malawi*. Sixteenth Conference on Retroviruses and Opportunistic Infections. AIDS MAP NEWS www.aidsmap.com February 12, 2009
5. WHO *Complementary feeding of breastfed children* WHO, Geneva. 2000.

Website:

WHO 2006 statement and report of Expert Consultation on HIV and Infant Feeding with references to more recent research at http://whqlibdoc.who.int/publications/2007/9789241595964_eng.pdf

This article is based on information in chapters 6 and 7 of 'Community Nutrition', Macmillan Education 2009.

Thanks to Dr Hanifa Bachou, MwanaMigimu Nutrition Unit, Kampala and Dr Louis Danga, Juba Teaching Hospital for their comments and inputs.