

## Breast Feeding

**Breast Feeding Practices:** In the three Pietermaritzburg project hospitals HIV-positive mothers will be trained in the most suitable feeding method for their respective circumstances. Where appropriate this will entail the collection and pasteurisation of their breast milk. HIV-positive mothers will be trained to express their breast milk into a container and then heat the container in boiling water for 20 minutes. All containers to be used are first to be sterilised.

The equipment to be used is discussed below. Mothers who do not have the necessary equipment will be provided with what they need.

The training will primarily be undertaken by volunteers recruited by local Rotarians. Once trained, the volunteers will go on to teach other volunteers.

Community clinics will be kept informed and encouraged to support the best feeding practice recommended for each respective mother.



## Safe infant feeding in the context of HIV

The impact of knowing that one is HIV positive must be exceedingly difficult to deal with, how much more so, when you are about to become a parent and you have to make vitally important decisions regarding your baby's future health.

How a mother should feed her baby is one of the most difficult decisions of all. However, every mother does have the right to the relevant information and to make her decision according to what she believes

to be in the best interest of herself and her new baby. She also needs ongoing support and encouragement from friends, family and health care workers around her - regardless of the choices she makes.

The WHO HIV and Infant Feeding Technical Consultation was researched by Zita Weise Prinze, (IFE Meeting, Oxford November 1st, 2006).

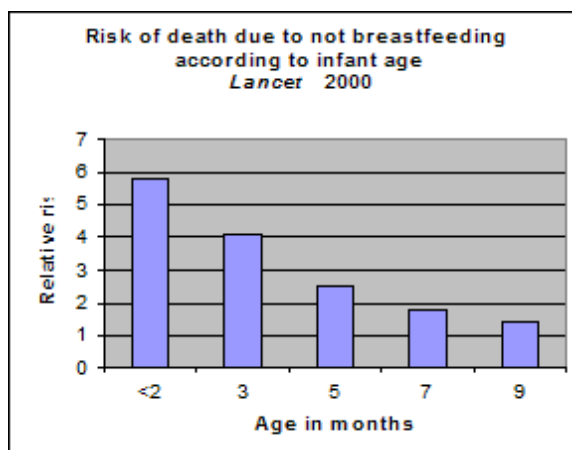
Her Geneva presentation, October 25-27, 2007 included:

### 1. New evidence on morbidity and mortality

- Early cessation of breastfeeding was associated with increased risk of infant morbidity (ill health) and mortality (death)
- Replacement feeding from birth had no additional benefit compared to short-duration breastfeeding in terms of preventing HIV infection or death.

2. 2/3rds of all breastfeeding-associated HIV transmission occurs after 6 months

3. Risk of death due to not breastfeeding declines substantially with infant age as illustrated by the graph below:



[http://www.milkmatters.org/needmilk/pasteurisation;jsessionid=1C13ED0D5B4A14A49A0E5FF22D4BF281.sybaris\\_jboss](http://www.milkmatters.org/needmilk/pasteurisation;jsessionid=1C13ED0D5B4A14A49A0E5FF22D4BF281.sybaris_jboss)

# What Are Safe Feeding Options In The Face Of HIV?

It is clear that there are no simple answers. According to present research findings, the feeding options open to HIV+ mothers are:

1. Pasteurising Breastmilk
2. Exclusive Breastfeeding
3. Formula Feeding

## 1. Pasteurising Breastmilk

### Vulnerable Babies

Probably the safest option for a HIV+ mother is to pasteurise her breastmilk. This means that she is able to offer her baby the advantages of breastfeeding, including the unique immune protective properties found in breastmilk, with minimal risk of her baby contracting HIV. (See table of comparison on [Pasteurisation page](#))

For these reasons, mother's own pasteurised milk is a highly successful feeding option used in many Neonatal Intensive Care Units in South Africa, including Groote Schuur, Tygerberg and Kalafong Hospitals. Pasteurisation is also being used to an ever increasing extent in the private sector. Pasteurised human milk is preferable to any, even highly specialized, infant formulas. Should a mother for any reason be unable to provide her baby with breastmilk, pasteurised donor milk is always an option that can be used during the vulnerable period.

(See page on [Starting a Milk Bank](#) or [Need Donor Milk?](#))

### Well Babies

Pasteurised, mothers own breastmilk is also an easy, safe, cost effective feeding option that can be used at home. There is no time limit to how long a baby can be fed his mother's pasteurised breastmilk, even when introducing solids or weaning a baby onto other milk.

Unfortunately with the present lack of funds, facilities and donor milk, feeding donor bank milk to healthy babies is not an option at present.

However wet nursing remains a possibility, when offered under controlled conditions.

For instance if a baby is orphaned and another family member, whose HIV status is confirmed as negative, is breastfeeding her own child, it is possible for her to feed the orphaned baby as well. Her responsibility to remain HIV negative is obviously of paramount importance.

### Increased Viral Load

Breastfeeding mothers, who are HIV+, need detailed information on exclusive breastfeeding. Mothers need to be educated on how to pasteurise their breastmilk in case they become ill or contract an infection such as mastitis.

Anybody whether HIV+ or HIV- needs to be educated on safe sex, but especially an HIV+ mother while breastfeeding.

[http://www.milkmatters.org/needmilk/pasteurisation;jsessionid=1C13ED0D5B4A14A49A0E5FF22D4BF281.sybaris\\_jboss](http://www.milkmatters.org/needmilk/pasteurisation;jsessionid=1C13ED0D5B4A14A49A0E5FF22D4BF281.sybaris_jboss)

# When would breastmilk need to be pasteurised?

Research indicates that pasteurising breastmilk destroys potentially harmful bacteria and viruses.

- It is therefore standard practice, all over the world, to pasteurise donor milk before giving it to recipient babies
- Mothers who are HIV positive should be given the option of pasteurising their breastmilk for their babies. It is immaterial whether their babies are premature or not

Three methods of Heat Treating / Pasteurisation Breastmilk are described below.

1. Pretoria Pasteurisation
2. Flash Pasteurisation
3. Holder Pasteurisation

## Pretoria Pasteurisation

Research conducted by Jeffrey B.S et al, J Trop Paeds 2000

### Equipment

- 1Lt Hart pot (milk warmer)
- 450gr Glass Peanutbutter jar
- Kettle or other utensil in which to boil water
- Clock / timer



### Method

- Label glass jar with baby's name, the date and time
- Mother expresses 50 to 150ml into glass jar
- Close lid and place jar into 1Lt pot
- Pour boiling water - 450ml or 2cm below pot brim
- May need weight on top of jar
- Leave standing for ½ hr
- Remove milk, cool, administer to baby or store in fridge

## Flash Pasteurisation

Research conducted by Israel-Ballard K. et al, JAIDS Oct 2005

### Equipment

[http://www.milkmatters.org/needmilk/pasteurisation;jsessionid=1C13ED0D5B4A14A49A0E5FF22D4BF281.sybaris\\_jboss](http://www.milkmatters.org/needmilk/pasteurisation;jsessionid=1C13ED0D5B4A14A49A0E5FF22D4BF281.sybaris_jboss)

- 1Lt Hart or similar pot
- 450gr Peanut butter or similar glass jar
- Stove / fire (Needs reasonably intense heat)

#### Method

- Label glass jar with baby's name, the date and time
- Mother expresses 50 to 150ml into glass jar
- Cover jar
- Place jar into pot / pan
- Add (room temp) water into pot to 2cm above milk level (about 450ml)
- May need weight on top of jar
- Bring the water to rapid boil - remove milk immediately from both the water and heat source
- Cool milk, administer to baby or store in fridge

Table of Nutritional Comparison between Pretoria and Flash Methods (by Israel-Ballard K. et al, JAIDS Oct 2005 )

	Mean (sd)		
	Flash	Pretoria	No Heat
Vitamin B12 (pg/mL) (n=6)	862.8 (667.0)	862.3 (651.1)	724.5 (488.0)
Vitamin C (mg/dL) (n=5)	4.2 (2.5)	3.6 (2.2)	5.3 (1.6)
Vitamin E (mg/L) (n=9)	2.7 (2.0)	2.4 (1.3)	3.0 (1.2)
Pyridoxal-5-phosphate (ug/L) (n=5)	29.0 (17.2)	28.0 (17.4)	28.8 (17.3)
Folate (ng/mL) (n=5)	18.7 * (3.8)	19.0 * (1.5)	13.3 (1.2)
Riboflavin (ug/L) (n=5)	728.0 (1142.9)	704.4 (1094.5)	667.2 (955.0)
Thiamin (nmol/L) (n=4)	18.0 (9.1)	17.8 (6.8)	12.3 (4.6)
Lactoferrin concentration (ELISA, mg/ml) (n=10)	0.214* (.272)	0.826* (.246)	1.341 (0.154)
Lactoferrin digestion (% digested) (n=9)	84.0 (10.1)	80.3 (8.8)	87.7 (12.5)
Lysozyme digestion (% digested) (n=9)	70.6 (21.0)	75.8 (14.9)	89.0 (14.1)

## Holder Method

### Equipment

- Locally manufactured Holder Pasteurization Unit available (Details available from Milk Matters)
- Glass jars of the same size with well sealing lids and similar amounts of milk in each jar.

### Method

- Unit is filled with tap water to a specified level
- Unit is switched on and warms water to a minimum of 62.5°C
- Jars of milk are submerged in Pasteurization Unit basket
- Temperature of 62.5 °C is automatically maintained for 30 minutes
- The buzzer will sound and the basket with jars must be removed