

## Grade Profile 6

**Question:** Is breast milk from HIV infected mothers that has been heat treated safe to give to their infants ?  
**Population:** Breast milk samples collected from HIV-infected mothers and samples from HIV uninfected mothers and spiked with HIV  
**Settings:** Laboratory, South Africa, Tanzania, USA  
**Bibliography:** MESH words included in search strategy: "flash heat breast milk; pasteurisation breast milk and HIV; heat treatment breast milk and HIV". 21 publications identified; 5 found to report primary data with sample size >1

Quality assessment							Summary of findings					Importance
No of studies	Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	No of patients		Effect		Quality	
							breast milk from HIV infected mothers or spiked sample that has been heat treated (Pretoria Past. or Flash heat)	Unheated control	Relative (95% CI)	Absolute		
<b>Presence of active HIV virus</b>												
3	observational	Serious <sup>1</sup>	no	no		none			Not estimable		Very low	
	Jeffery 2001						0/51 (0%)	9/51 (17.6%)				
	Israel-Ballard 2005					serious <sup>2</sup>	1/5 (20%) PP and 0/5 (0%)FH with evidence viral replication	3/5 (60%)				
	Israel-Ballard 2007						0/98 (0%) FH with evidence active cell-free HIV	30/98 (30.6%)				
<b>Nutritional composition, bacterial safety, immunological integrity</b>												
1 (nutrition)	observational	Very serious <sup>3</sup>		No		Very serious <sup>4</sup>	Neither PP or FH caused sig. decrease vitamin concentration		Not estimable		Very low	
3 (bacterial)	observational	Very serious <sup>5</sup>	no	No			FH eliminated path and non-path bacteria (73/73)& prevented bacterial growth at rm temp for 8 hrs (33/38)	38/38 samples contaminated at all time points			Very low	
1 (immuno)	observational	Very serious <sup>3</sup>		No			FH resulted in significant reduction IgA, IgG, HIV-1 gp120 IgG,		Not estimable		Very low	

1. Publications from only two research groups
2. Small sample size
3. only one study
4. sample size n=5
5. All publications from same research group

**References:**

Chantry CJ, Israel-Ballard K, Moldoveanu Z, Peerson J, Coutsooudis A, Sibeko L et al. Effect of flash-heat treatment on immunoglobulins in breast milk. *J Acquir.Immune.Defic.Syndr.* 2009;51(3):264-7  
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Israel-Ballard K, Coutsooudis A, Chantry CJ, Sturm AW, Karim F, Sibeko L et al. Bacterial safety of flash-heated and unheated expressed breastmilk during storage. *J Trop.Pediatr* 2006;52(6):399-405

Israel-Ballard K, Donovan R, Chantry C, Coutsooudis A, Sheppard H, Sibeko L et al. Flash-heat inactivation of HIV-1 in human milk: a potential method to reduce postnatal transmission in developing countries. *J Acquir.Immune.Defic.Syndr.* 2007;45(3):318-23

Jeffery BS, Webber L, Mkhondo KR, Erasmus D. Determination of the effectiveness of inactivation of human immunodeficiency virus by Pretoria pasteurization. *J Trop.Pediatr* 2001;47(6):345-9

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