



## The Importance of Critical Reading

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We read our way through a wide variety of materials every day. As we move from the horoscope in the newspaper to a pamphlet from a political candidate to an internet blog our minds are constantly taking in and evaluating information. Without much thought, we use critical reading skills to determine how much of this information to accept and how much to suspect.

The skill of critical reading may be defined as the ability to evaluate the credibility of a piece of writing. The importance of critical reading is emphasized when one tries to navigate the many contradictory research papers being published on the subject of whether breastfeeding is protective against a wide range of diseases, from “everyday” infections (*e.g.* colds) to allergies, autoimmune and chronic illnesses, not to mention prevention of obesity. In *Immunobiology of Human Milk: How Breastfeeding Protects Babies*, the author, Lars Hanson, provides some key factors to look for when reading a research paper.

First, and perhaps most obvious, is the definition of “breastfeeding”. Some studies define “exclusive breastfeeding” as absolutely no other food or liquid being given, while others have a (often arbitrary) maximum intake of non-human milk allowed. Some studies compare “any breastmilk” with non-breastfed; others differentiate between breastmilk and breastfeeding. These inconsistent definitions make the results difficult to interpret. Some studies have shown that exposure (*any* exposure) to cow’s milk protein may be a factor in the etiology of diabetes; we don’t know what else it may affect. Therefore, “exclusive breastfeeding” which allows for small amounts of non-human milk supplementation creates a confounding factor—something that causes an effect but that is not accounted for in the interpretation of the results.

Second, the study design can create problems. For example, retrospective studies that depend on subjects’ recall of situations many years ago can be affected by “memory lapses” (and rose tinted glasses). They may also suffer from definition problems. For example, a mother may state she breastfed exclusively from birth, but if her baby was born in a hospital where babies were kept in the nursery and routinely fed formula (to allow mothers to “recover”), this may not actually be correct. And, more importantly, the researcher may not know it is incorrect.

Then there is the research that has been disproved by further study. How can we be sure that today’s “correct” answer will not be shown to be wrong tomorrow? That is where critical reading comes in. Whenever possible, it is useful to read the original research and look at their original data. It may not be wise to depend on the popular press to report and interpret research accurately. It may be necessary to analyze the study and then ask if the conclusions are logical or whether they seem to have been reached through a biased lens.

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It is important to recognize that, in breastfeeding, nature has created a system that protects vulnerable newborns but that it is very difficult to analyze the components of that system individually. As James Akre says in *The Problem With Breastfeeding*: “It’s time we adopted the perspective that what Mother Nature has provided is the default even as we strive to understand why.”



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### *Many Ways to Help LLLC Help New Moms*

- ✓ **While you work** – through donation matching programs and payroll deduction plans
- ✓ **While you shop** – with programs that raise funds through corporate donations, such as the Eat to Give program [www.charityservices.ca](http://www.charityservices.ca) and the iGive [www.iGive.com](http://www.iGive.com) program.
- ✓ **Be a monthly donor.**
- ✓ **Purchase a membership** – for yourself or as a baby shower gift for a friend.
- ✓ **Purchase a Womanly Art of Breastfeeding** or other LLL books through Amazon.ca and a percentage of your purchase will be donated to LLLC. Go to the LLLC website at [www.LLLC.ca](http://www.LLLC.ca) and click on the Amazon.ca link to make your purchase.
- ✓ Make a **planned gift** through your will or stock transfer.
- ✓ Send a **donation to honour** a loved one – go to our website and click on Donate Now!

*Thanks for your support!*

# *Breastfeeding Tidbits*

*A quiz about recent research (and some not so recent information, for review)*

By Nicola Aquino, Area Professional Liaison Leader for Atlantic Canada

- 1) The pH of a breastfed baby's gut is:
  - a) 5.1 - 5.4
  - b) 5.9-7.3
  - c) 5.7-6.0
  - d) 6.0-7.0
- 2) The bacteria in a breastfed baby's gut are:
  - a) Similar to adult flora
  - b) Bifidobacteria
  - c) Obligate anaerobes
  - d) Enterobacteria and enterococci
- 3) Introduction of cow's milk protein to an infant:
  - a) Can increase the risk of developing insulin-dependent diabetes mellitus
  - b) Can increase the incidence of atopic illness (allergies)
  - c) Should be avoided until after the tight junctions of the gut close
  - d) All of the above
- 4) Infants who were breastfed when exposed to a painful stimulus (heel prick) compared to controls administered glucose solution:
  - a) Had similar responses
  - b) Had more intense responses
  - c) Had less intense responses
  - d) Showed no response
- 5) When a mother complains of "low milk supply", the first step that a healthcare professional should take is:
  - a) To recommend herbal galactagogues
  - b) To explore why the mother believes her supply is low
  - c) To recommend a prescription galactagogue
  - d) To determine the cause of the low supply
- 6) When asked to self-rate their fatigue levels, breastfeeding mothers
  - a) Were more fatigued than women who formula fed
  - b) Were less fatigued than mothers who formula fed
  - c) Reported similar levels of fatigue to those who formula fed
  - d) The study has not been done
- 7) Dental caries are a problem for breastfed infants because they nurse frequently during the night.
  - a) True
  - b) False



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- 8) Breastfeeding \_\_\_\_\_ Inflammatory Bowel Disease (IBD).
- a) Increases the incidence of
  - b) Is protective against
  - c) Causes
  - d) Is unrelated to the incidence of
- 9) Breastfeeding may explain:
- a) tolerance of transplants between siblings
  - b) tolerance of 'mother-to-child' transplant
  - c) tolerance of 'child-to-mother' transplant
  - d) tolerance of 'father-to-child' transplant
- 10) Mothers who breastfeed benefit from \_\_\_\_\_ after menopause.
- a) Lower cholesterol levels
  - b) Less cardiovascular disease (CVD)
  - c) Lower incidences of type 2 diabetes
  - d) All of the above



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## Answers to Breastfeeding Quiz

1. a) Exclusively breastfed babies have a gut pH of 5.1 - 5.4 for the first 6 weeks. Formula-fed babies have a higher pH (5.9-7.3), while those receiving mixed feedings have a pH of 5.7-6.0. Marsha Walker, *J Hum Lact.*, Dec 1999; vol. 15: pp. 335 - 336
2. b) Bifidobacteria are the primary bacteria of the gut of a breastfed infant; they out-compete the pathogenic microbes such as *E. coli*. Any introduction of supplements--formula or complementary solids--results in an alteration of this flora to one more closely resembling that of an adult. It can take between two and four weeks for the "breastmilk flora" to re-establish itself once the supplement is discontinued (i.e. exclusive breastfeeding is resumed). Bullen, CL; *J Med Microbiol* 1977; 10:403-413 (<http://jmm.sgmjournals.org/cgi/reprint/10/4/403>) as cited by Marsha Walker, *J. Hum. Lact.* Dec 1999; vol. 15: pp. 335 - 336
3. d) In susceptible families, introduction of cow's milk protein can increase the risk of developing diabetes and allergies. Avoiding it until after the tight junctions close may help to reduce the risk. American Academy of Pediatrics as found at: <http://pediatrics.aappublications.org/cgi/reprint/94/5/752?maxtoshow=&HITS=10&hits=10&RESULTFORMA T=1&andorexacttitle=and&andorexacttitleabs=and&andorexactfulltext=and&searchid=1&FIRSTINDEX=0&s ortspec=relevance&volume=94&firstpage=752&resourcetype=HWCIT> and Marsha Walker, *J Hum. Lact.* Dec 1999; vol. 15: pp. 335 - 336
4. c) Despite limitations to the research, the researchers found that breastfeeding during a heel prick procedure clearly reduced the infant's expression of pain responses, including compromise of oxygen saturation and tachycardia.  
Codiopietro L, Ceccarelli M, Ponzone A. Breastfeeding or oral sucrose solution in term neonates receiving heel lance: a randomized, controlled trial. *Pediatrics*. 2008;122:e716-e721. as quoted by Donna J. Chapman, *J Hum Lact* 2009; 25; 118  
<http://pediatrics.aappublications.org/cgi/content/abstract/122/3/e716>
5. d) and b) can both be correct. It is important that the various factors impacting on supply and perception of supply be addressed. If mother has unrealistic expectations of baby-feeding, she may think her supply is low because the baby is not following those expectations. If it is not just mother's perception, then the cause of the supply issue must be identified before a solution can be suggested. Galactagogues (herbal or prescription) will be of little use if baby is not latched on and suckling well, or if mother has a physical problem that is preventing milk production/transfer (such as lack of nipple pores). West, Diana and Lisa Marasco, *The Breastfeeding Mothers Guide to Making More Milk*, 2008
6. b) "Mothers' self-rated fatigue levels were spread evenly from "very fatigued" to "not at all fatigued." We found that fatigue varied by feeding method. When asked to rate their energy on most days, 28.7% of breastfeeding mothers rated their energy as excellent or very good, compared to 19.4% of formula feeding mothers, and 19.1% of women who combined methods. In looking at the other end of the scale, 23.4% of breastfeeding women described their energy level as fair or poor, compared with 39% of women who formula feed, and 35.4% of women who combined methods. Women's friends were twice as likely to think the women would get more rest if they formula fed than the women thought themselves." Kathleen Kendall-Tackett and Thomas W. Hale, Survey Of Mothers' Sleep and Fatigue: Preliminary Findings in *MEDICATIONS & MORE*: issue 39; vol. 13 Feb. 2009 (monthly e-magazine from Hale Publishing)
7. b) Dental caries in infants can be caused by many things, but breastfeeding isn't one of them. When babies are suckling at the breast, the nipple is deep in the mouth meaning that the milk goes straight down the

oesophagus and does not pool in the mouth. However, when baby is not suckling, very little milk is released from the breasts, unlike from a bottle. Mohebbi, SZ, *et al* ([Community Dent Oral Epidemiol](#). 2008 Aug; 36(4):363-9) conclude: “On account of its association with ECC [early childhood caries], milk-bottle feeding at night should be limited, whereas prolonged breastfeeding appears to have no such negative dental consequences.”

8. b) A recent meta-analysis by Theresa Mikhailov and Sylvia Furner (*World Journal of Gastroenterology*. 2009 January 21; 15(3): 270-279.) concluded that, despite a few studies showing the contrary, the overwhelming evidence is that breastfeeding provides protection from IBD. They do, however, recommend that further studies be done to control for gene-environment interaction and comment that the definition of ‘breastfeeding’ may not be consistent.

<http://www.pubmedcentral.nih.gov/articlerender.fcgi?tool=pubmed&pubmedid=19140226>

9. c) A recent article in *Blood*, (Aoyama, K *et al*. [Blood](#). 2009 Feb 19;113(8):1829-33. Epub 2009 Jan 5) describes the increased tolerance of ‘child-to-mother’ bone marrow transplant, that is a reduction in graft-versus-host-disease (GVHD), because of breastfeeding. The key seems to be noninherited maternal antigens (NIMAs) which are passed from mother to infant through the placenta and through breast milk. The study shows that both *in utero* and oral (breastmilk) exposures are required for optimum effect. The authors note that transplants between siblings, when the donor sibling is expressing NIMAs (but not inherited paternal antigens) are less prone to GVHD; they had also previously shown that ‘mother-to-child’ donation is tolerated better than other allografts.

<http://bloodjournal.hematologylibrary.org/cgi/content/full/113/8/1829>

10. b) Schwarz, *et al*, as reported in *Obstetrics and Gynecology* (vol. 113, no. 5, May 2009), have analyzed data from the Women’s Health Initiative trials and shown that while any breastfeeding reduces the risk factors for CVD, breastfeeding for longer than 7 months significantly reduces them. A lifetime cumulative breastfeeding of 12-24 months reduces the risk by 10%. They state: “It has been hypothesized that lactation may reduce cardiovascular risk by mobilizing accumulated fat stores. However, our finding that women who breast-fed had lower rates of cardiovascular disease after adjustment for BMI category indicates that lactation does more than simply reduce a woman’s fat stores. Hormonal effects, such as those of oxytocin, may have significant effects on cardiovascular profiles.”

Happy Summer!



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