La Leche League Canada
Educational Quizzes Volume 3
About La Leche League Canada

For fifty years, La Leche League has brought experienced and inexperienced mothers and pregnant women together to learn from each other. This model is a remarkably effective, practical way to help women connect with each other and to build skills and confidence in breastfeeding and parenting.

La Leche League Canada encourages, promotes and provides mother-to-mother breastfeeding support and educational opportunities as an important contribution to the health of children, families and society.

More information about our programs and services can be found at our website:

www.LLLC.ca

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All the quizzes in this volume are reproduced from *Keeping in The LLLoop*, La Leche League Canada’s publication for Health Professionals. All the links and references were accurate at time of original publication. We apologize for any inconvenience if that is no longer the case. Original publication dates are indicated in parentheses. Unless otherwise indicated, the quizzes were created by Nicola Aquino, currently Professional Liaison Administrator for LLLC.
1. The Baby-Friendly™ Initiative (BFI):
   a. Is a Canadian program.
   b. Was originated in Sweden.
   c. Is an international program established by the WHO and UNICEF.
   d. Began in the USA.

2. The Baby-Friendly™ Initiative (BFI) has how many steps?
   a. 7 for Hospitals and 10 for Community Health Services.
   b. 10 for Hospitals and 7 for Community Health Services.
   c. 7 for both Hospitals and Community Health Services.
   d. 10 for both Hospitals and Community Health Services.

3. The assessment process provides a Pass/Fail grade to the institution being assessed.
   a. True
   b. False

4. The intent of the Baby-Friendly™ Initiative is:
   a. To improve breastfeeding rates by 25%.
   b. To reduce ‘free’ formula provided to hospitals.
   c. To improve breastfeeding outcomes for mothers and babies by improving the quality of their care.
   d. To have all mothers initiate breastfeeding within an hour of birth.

5. A self-appraisal tool is used:
   a. By mothers touring the hospital prenatally.
   b. By staff of the hospital to gather information about the present strengths, areas of concern, and practices that impact on fulfilling the steps to becoming Baby Friendly™.
   c. By health professionals in determining effective latching and milk transfer.
   d. To get started on the journey to becoming a Baby Friendly™ facility.

6. The 10th Step states that hospitals should:
   a. Help mothers find local peer breastfeeding groups in either a trained mother to mother format like La Leche League Canada Groups, or a trained peer counsellor format.
   b. Give mothers ‘emergency formula’ to take home.
   c. Create support groups for breastfeeding mothers.
   d. Not accept free formula from the manufacturers.
7. The first Step/Point in both BFI plans is:
   a. Train all health professionals in the knowledge and skills necessary to implement the breastfeeding policy.
   b. Inform pregnant women and their families about the health benefits and management of breastfeeding.
   c. Have a written breastfeeding policy that is routinely communicated to all health care staff.
   d. Help mothers initiate breastfeeding within a half-hour of birth.

8. What else is included in the Hospital’s 10 Steps?
   a. Give newborn infants no food or drink other than breastmilk, unless medically indicated; give no artificial teats or pacifiers.
   b. Practice rooming-in; allow mothers and infants to remain together 24 hours a day.
   c. Encourage breastfeeding on demand.
   d. All of the above.

9. What else is covered in the 7 Point Plan?
   a. Support mothers to establish and maintain exclusive breastfeeding for six months.
   b. Encourage sustained breastfeeding beyond six months with appropriate introduction of complementary foods.
   c. Provide a welcoming atmosphere for breastfeeding families.
   d. All of the above.

10. What are some ways that you can assist your institution on the road to becoming Baby-Friendly™?
    a. Request in-service presentations to stay up-to-date with new research in breastfeeding.
    b. Participate in your local BFI Committee.
    c. Collaborate with other health professionals to ensure sharing of evidence-based and best practice.
    d. Support breastfeeding across the continuum of service.

**Bonus Question:** How many Canadian Facilities have received Baby-Friendly™ designation?
Answers

The Baby-Friendly™ Initiative: How Much Do You Know?


2. b. Although there is much overlap, the guidelines are “The Ten Steps to Successful Breastfeeding” for hospitals, and “The 7 Point Plan for the Protection, Promotion and Support of Breastfeeding in Community Health Services.” These form the basis of good practice in maternity care. [Editor’s note: In October 2010 the BCC merged the two sets of guidelines into one. However, these answers still reflect the separate documents.]

3. b. The Breastfeeding Council of Canada (BCC) Guiding Assumptions state: “The process of changing attitudes and practice is important, not ‘passing’ or ‘failing’ the assessment.” and “The global assessment tool will uncover adequate evidence of Baby-Friendly™ practice outcomes in the facility being assessed.”

4. c. is a direct quote from BCC Guiding Assumptions. “The Baby-friendly Hospital Initiative (BFHI) was launched by WHO and UNICEF in 1991, following the Innocenti Declaration of 1990. The initiative is a global effort for improving the role of maternity services to enable mothers to breastfeed babies for the best start in life. It aims at improving the care of pregnant women, mothers and newborns at health facilities that provide maternity services for protecting, promoting and supporting breastfeeding. A variety of tools and materials were developed and provided for implementation of the BFHI, including an 18-hour course, a self-appraisal tool, and an external assessment tool.” [http://www.who.int/nutrition/topics/bfhi/en/index.html]

5. b and d The self-appraisal tool is the starting point for hospitals and community health services wishing to become Baby Friendly™. After the appraisal, they will know what is going well and what still requires work. This information can then be used to create a work plan to move the process forward.

6. a. The exact statement is: “Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.” The equivalent Community Health Services Point is #7, “Promote collaboration between health care providers, breastfeeding support groups and the local community.” Repeated studies have shown peer support to be a factor that increases the duration of breastfeeding. “Fostering the establishment of peer support” can be accomplished in many ways. Health professionals can refer directly to existing community grass roots groups. They can collaborate with La Leche League trained Leaders to help them establish new Groups in communities where none exist. They can foster a group’s growth and development by: referring mothers, communicating identified needs from a public health perspective, and providing space or resources. A mission of La Leche League Canada is “to provide mother-to-mother...
breastfeeding support and educational opportunities as an important contribution to the health of children, families and society.” (www.LLLC.ca) Ideally, peer support groups will be structured in such a way that they continue regardless of budgetary changes or changing institutional health priorities.

7. c. The other answers are also parts of the baby friendly way to good practice!: a: Step/Point 2; b: Step/Point 3; d: Step 4.

8. d. Direct quotes from BCC; for details see: http://breastfeedingcanada.ca/html/bfi.html


10. Any and all of these options

**Bonus:** 11 Hospitals/Birthing Centres and 14 Community Health Services (the majority in Quebec – 8 hospitals and 11 CHS), as of August, 2008. http://breastfeedingcanada.ca/pdf/BCC%20List%20of%20Designated%20Facilities%20January%202009.pdf
There are more than 20,000 designated facilities in 152 countries around the world.
Breastfeeding Tidbits
A quiz about recent research (and some not so recent information, for review)
(July 2009)

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) When exposed to a painful stimulus (heel prick) and compared to a control group, breastfed infants:
   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

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
Answers

Breastfeeding Tidbits

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


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. Codipietro 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, PhD, RD, *J Hum Lact* 2009; 25; 118

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 and 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 breastmilk. 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. d) 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.”
Spring BREASTFEEDING QUIZ  
(February 2010)

1. Initiating breastfeeding in a way that takes into account baby’s natural instincts and also promotes a good latch and frequent feedings can be accomplished by:
   a) Having mother place baby in cradle hold position and start breastfeeding as soon as possible after birth
   b) Placing baby on mother’s abdomen and leaving mother and baby to interact while baby navigates his way to the breast and spontaneously latches on.
   c) Teaching mother a variety of ways to hold the baby
   d) Taking baby to the nursery, cleaning him up, giving him a bottle of glucose-water and allowing mother some time to recover from the birth

2. Why is milk white?
   a) Calcium
   b) Casein
   c) Whey
   d) Antibodies

3. What is the average percentage of a drug administered to a lactating woman that actually gets to the breastfeeding baby?
   a) 0.01%
   b) 0.1%
   c) 1.0%
   d) 10%

4. A mother calls on the telephone to ask for breastfeeding help. She is nursing her seven day old baby every 3-4 hours for at least an hour each time. The baby passed one black tarry stool yesterday and one today; he’s had “a couple” of wet diapers each day. Your FIRST recommendation is to suggest to the mother that she should:
   a) Relax; baby’s meconium stools will change soon.
   b) Have her baby seen by a physician as soon as possible.
   c) Begin supplementing with formula right away.
   d) Try switch nursing and add in at least one more feed per day.

5. Colostrum is yellow because of:
   a) Protein/Immunoglobulins
   b) Something mother has ingested
   c) Beta Carotene
   d) Hormones
6. Why would one not rely solely on an official manufacturer’s monograph (drug information) to check for safe drug use in a breastfeeding mother?
   a) the numbers of women in the studies are too low for the data to be of significance
   b) drug manufacturers do not have to do studies on a drug’s appearance in breastmilk for a drug licence in order to sell their product in Canada
   c) the monographs are not updated regularly to include published data in the literature on appearance of a drug in breastmilk
   d) a and b

7. A Mother whose milk production is too low for the healthy growth of her baby should:
   a) wean from the breast and feed formula exclusively
   b) be supported to combine breast and formula feeding, using breastfeeding supportive techniques
   c) stop putting baby to breast and pump exclusively, combining milk and formula in a bottle
   d) be told to put baby to breast more often and avoid all artificial feeding until mother’s production increases

8. A supplement can be given:
   a) before or after breastfeeding, using a cup, spoon or other non-nipple method
   b) using a nursing supplementer at the breast
   c) using paced feedings from a bottle
   d) all of the above

9. Because colostrum is produced in small amounts:
   a) babies will not get enough to sustain them and will need supplements
   b) mothers will get sore nipples if they feed the baby too often
   c) baby will nurse frequently and this will help to establish a good milk supply
   d) it is not necessary for a baby to receive it

10. For an asymmetric latch, expect to see:
    a) Nose and chin buried in breast
    b) Lips flanged, no areola visible
    c) Lips pursed or puckered, areola more visible at top than bottom
    d) Baby’s head tilted back slightly, chin buried in the breast, lips flanged out, nose clear of breast, more of areola covered by bottom lip than top
Answers
Spring BREASTFEEDING QUIZ

1. b) Babies have inborn instincts and skills that help them breastfeed right from birth. Researchers have repeatedly shown that babies born after an unmedicated birth are capable of self-attaching to the breast, although this can take some time: on average 45-60 minutes, but sometimes up to 2 hours. Babies who are showing effects from medications/interventions during labour and delivery still benefit from being held enface skin-to-skin, although self-latching behaviours may be modified or absent. If separation of mother and baby is medically required, the mother should begin hand-expressing colostrum as soon as possible and should continue expressing as frequently she can. If the baby can’t self-attach because of medication from labour, if he needs immediate care, or there is separation, self-attachment behaviour continues to be seen for several weeks post partum; the mother can hold the baby on her chest and allow him to self attach once she and the baby are together and ready. Newman, J. and Pitman, T. The Latch and Other Keys to Breastfeeding Success, Hale Publishing, 2006.

2. b) Casein, the milk protein that is rich in calcium makes the milk white. Whey looks clear or watery. Many of the immunoglobulins and protective proteins are in the whey portion of milk. Human milk is about 80% whey and 20% casein; it moves through the baby’s digestive system quickly. Cow’s milk is about 80% casein and forms big curds in the calf’s stomach which are very slow to digest. Cow’s milk is cloudy and chalky because it’s higher in casein. The casein can be made into cheese. Smith, L. Coach’s Notebook Jones and Bartlett Publishers, 2002. p. 34

3. c) “The relative infant dose in the vast majority of drugs is (less than one percent) <1%. “ Hale T. Medications and Mothers’ Milk, Pharmasoft: Amarillo Tx. 2008 p 9

4. b) A baby should pass meconium, the black tarry first stool, within the first 48 hours after birth. As mother’s milk comes in, around day 3, he should start having 3-5 bowel movements every 24 hours, each the size of a $2 coin. After a brief transition, they should become yellow and seedy by day 5. By day five, babies should also be having 5-6 very wet, heavy diapers per day. A baby who is still passing meconium on day 7 and is not stooling several times per day requires urgent medical assessment. Mohrbacher, N. and Stock J. The Breastfeeding Answer Book, 3rd Edition. Illinois: La Leche League International, 2003. p. 150
Breastfeeding Committee for Canada Checklists and Appendices, Appendix 5: “Initiation of Lactation: Anticipated Behaviours and Feeding Patterns”
http://breastfeedingcanada.ca/pdf/webdoc55.pdf (p. 13)
5. c) Because it contains large amounts of beta-carotene. Beta-carotene is an anti-oxidant and protects the gut from many diseases. Beta-carotene containing vegetables have high amounts of vitamin A and have been found to reduce the risk of cancers of the digestive system in adults. (Linda Smith, Bright Future Lactation Resource Center website, Smith, L. Coach’s Notebook Jones and Bartlett Publishers, 2002. p. 33)


7. b) Any feeding of human milk, ideally from the breast, is better than none. When a baby can effectively suckle, a nursing supplementer will optimize mother’s time as well as her potential supply. If a baby cannot yet breastfeed effectively, then alternatives, whether cups, feeding tubes or bottles need to be a positive experience for mothers. Bottle-feeding is familiar to many mothers and some see breast and bottle as an "all or nothing" choice. However, with appropriate teaching and support, they can learn to bottle feed in a manner that lessens interference with breastfeeding. Generally, no pump is as effective as a baby, especially after the first month postpartum, so exclusive pumping will not remove as much milk as a healthy baby, potentially decreasing mother’s production over time. Depending on the cause of the low milk production, simply increasing stimulation by more frequent breastfeeding may not be sufficient to increase her production; this may put the baby’s health at risk. Maturity and time can change the baby’s needs. As the baby starts solids, the formula supplement can be decreased, while breastfeeding continues. West, D. and Marasco, L. The Breastfeeding Mother’s Guide to Making More Milk, McGraw-Hill, 2009. p. 48-51. Similar information available at: http://www.bfar.org/bottlefeeding.pdf

8. d) All answers are correct; the best method of delivering the supplement will depend upon what works for a given dyad. In some cases, giving a small amount of supplement before the nursing session means the baby is better able to focus on coming to the breast because he is not screaming and hungry. Having staved off the initial hunger, baby may be more willing to work at getting the latch correct and/or sucking until a let down. The baby then equates satiation and comfort with the breast, and will probably fall asleep there, rather than fussing at the breast and receiving satiety from the formula at the end. Each of the three methods of giving the supplement has pros and cons. Paced feeding from a bottle can actually enhance breastfeeding; using a nursing supplementer allows the baby to receive the supplement while breastfeeding and, for a short time, cup or spoon are effective. West, D. and Marasco, L. The Breastfeeding Mother’s Guide to Making More Milk, McGraw-Hill, 2009, Chapter 4 “Supplementing Without Decreasing Your Milk Supply”. Also available at: http://www.bfar.org/Bottle-First.pdf
9. c) “Lactation is a robust process that is organized to meet the nutritional, emotional, developmental, and health needs of the infant and young child. Breastfeeding is a dynamic coordination between the changing needs, stores, and capacities of a child and the delivery of appropriate nutrients, immune factors, and physical contact necessary to support the normal growth and development of a new person.” Walker, M. *Breastfeeding Management for the Clinician: Using the Evidence*, Jones and Bartlett Publishing, 2006 p. 80

10. d) This is the most accurate description of an asymmetric latch, which many mothers find effective. However, appearance is not everything. If a mother is having pain then there is something wrong, no matter how perfect it may look. On the other hand, if the mother is pain free and there is good milk transfer, there is no rush to change the positioning, no matter how wrong it looks. However, mother should know that ensuring a good latch will avert potential problems as the baby matures and will ensure continued effective milk transfer.
Summer Breastfeeding Quiz
By Linda Wieser, Area Professional Liaison, Atlantic Canada
(Summer 2010)

1. The theme for World Breastfeeding Week 2010 (October 1-8th) is “Breastfeeding: Just 10 Steps the Baby-Friendly Way.” Which of the following is not one of the 10 Steps for Baby-Friendly™ Hospitals:
   a. Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.
   b. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.
   c. Have a lactation consultant on staff in the hospital or clinic to assist breastfeeding mothers.
   d. Practice rooming-in: allow mothers and infants to remain together 24 hours a day.

2. Which statement is INCORRECT regarding the health costs of not breastfeeding?
   a. Estimates suggest that if 90% of U.S. families exclusively breastfeed for six months, the United States would save $13 billion/year and prevent an excess 911 deaths.
   b. There is not enough research to estimate the costs of not breastfeeding.
   c. If 80% of U.S. families exclusively breastfeed for six months, estimates suggest that $10.5 billion would be saved and 741 deaths prevented.
   d. Treatment of otitis media is often used to determine the cost of not breastfeeding, because any use of formula in the first 6 months is significantly associated with increased incidence of otitis media.

3. Which statement is TRUE about lipase?
   a. Freezing milk with too much lipase will take away the unpleasant smell and taste.
   b. Lipase is an enzyme in breast milk which digests sugars.
   c. Too much lipase in breastmilk is dangerous for baby.
   d. To eliminate the unpleasant smell and taste of too much lipase in breastmilk, a mother needs to heat her milk to a scald right after pumping.

4. When a milk ejection reflex (MER) occurs in the human breast, what happens?
   a. Intra-ductal pressure increases and the milk ducts dilate to accommodate the flow.
   b. When the myoepithelial cells relax, there is a reverse flow of the milk.
   c. The release of the hormone oxytocin triggers the milk ejection reflex.
   d. All three.

5. Which is NOT CORRECT about human breast anatomy?
   a. There are lactiferous sinuses about 1” from the base of the nipple.
   b. The milk ducts are often superficial and easily compressed.
   c. Glandular tissue can make up as little as half the breast volume.
   d. The average number of milk ducts at the nipple is 9.
6. Which is NOT a factor related to risk of greater weight gain and obesity among formula fed infants?
   a. Greater weight gain during the first 8 days of life.
   b. Mothers encouraging baby to finish a bottle.
   c. Higher fat content in formula than in breastmilk.
   d. Greater daily intake among formula fed babies.

7. What is the recommended feeding strategy for term babies who are being breastfed and are jaundiced?
   a. Wean the baby from breastmilk for at least two days.
   b. Keep the baby at breast and supplement at breast (or cup feed) with expressed milk, donor milk or formula.
   c. Have the mother pump regularly and bottle feed her baby.
   d. Have the mother breastfeed 3 times a day and supplement with formula for other feeds.

8. La Leche League Leaders are:
   a. Experienced breastfeeding mothers who receive training in breastfeeding management and provide mother to mother support via phone, email or meetings.
   b. Women who have breastfed their babies for at least two years.
   c. Breastfeeding mothers who have never used formula or given their babies a bottle.
   d. Paid breastfeeding educators who take a 6-week course in breastfeeding management and counselling techniques.

9. Which of the following statements is NOT TRUE about the hormone oxytocin?
   a. Oxytocin causes contraction of myoepithelial cells surrounding the alveoli, resulting in increased milk flow.
   b. Oxytocin levels are higher in mothers who exclusively breastfeed than in those who use supplementary bottles.
   c. Oxytocin is a chemical messenger released in the brain chiefly in response to social contact, especially skin to skin contact.
   d. Oxytocin is the hormone responsible for milk production.

10. A father can undermine breastfeeding when he:
    a. Lets his partner know that he supports her decisions.
    b. Suggests getting away for a weekend without their young baby.
    c. Learns the basics of breastfeeding before his baby arrives.
    d. Keeps his partner company during her breastfeeding sessions.
Answers

Breastfeeding Quiz

1. c) Lactation consultants are not mentioned in any of the 10 Steps, which are:
   1. Have a written breastfeeding policy that is routinely communicated to all health care staff.
   2. Train all health care staff in skills necessary to implement this policy.
   3. Inform all pregnant women about the benefits and management of breastfeeding.
   4. Help mothers initiate breastfeeding within a half-hour of birth.
   5. Show mothers how to breastfeed, and how to maintain lactation even if they should be separated from their infants.
   6. Give newborn infants no food or drink other than breastmilk, unless medically indicated.
   7. Practice rooming-in; allow mothers and infants to remain together 24 hours a day.
   8. Encourage breastfeeding on demand.
   9. Give infants no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.
   10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

Information about the Baby-Friendly Initiative is available on the Breastfeeding Committee of Canada Web site:

2. b) There is much research on the risks and extra costs associated with not breastfeeding. Answers a) and c) are quoted from Bartick M, Reinhold A. “The burden of suboptimal breastfeeding in the United States. A pediatric cost analysis.” Pediatrics, 2010, 125 e1048-e1056. For d) see McNiel M, Labbok M, Abrahams S. “What are the risks associated with formula feeding? A re-analysis and review.” Birth, 37:1 March 2010.

3. d) Adequate lipase activity is needed for human infants to digest fats. However, mothers with too much lipase activity complain that their milk smells rancid. This can happen with freshly pumped milk or milk thawed from the freezer. When human milk is frozen or refrigerated, lipase is not affected; however, heating expressed milk to a scald significantly reduces lipase activity. Riordan J and Wambach K. Breastfeeding and Human Lactation, Jones and Bartlett Publishers: Toronto, 2010, p 146.


6. c) Breastmilk is higher in fat than formula. (A comparison of the nutrients in breastmilk, other mammals and formula can be found at: [http://www.saanendoah.com/compare.html](http://www.saanendoah.com/compare.html))

   Answers a), b) and d) are all factors influencing greater weight gain by formula fed babies. In an excerpt from her new book *Breastfeeding Answers Made Simple - A Guide for Helping Mothers* (due out in July 2010), Nancy Mohrbacher discusses research related to milk intake among formula-fed babies. This is the feature article in the May 2010 Medications and More e-magazine ([http://www.ibreastfeeding.com/category/newsletters/may-2010](http://www.ibreastfeeding.com/category/newsletters/may-2010)).

7. b) The Academy of Breastfeeding Medicine (ABM) in “Clinical Protocol #22: Guidelines for the management of jaundice in the breastfeeding infant equal to or greater than 35 weeks’ gestation,” *Breastfeeding Medicine*, 2010; 5:87-93, recommends that regardless of which breastmilk substitute is chosen, supplementation should be achieved by cup or use of a supplemental nursing device simultaneously with each breastfeeding. Nipples/teats and bottles should be avoided where possible. ([www.bfmed.org](http://www.bfmed.org)).

8. a) La Leche Leader Leaders need to have at least 12 months personal experience breastfeeding a baby; however, there is no requirement for when a baby should be weaned or concerning giving formula or using bottles. The training period for leadership usually lasts 9-12 months and incorporates reading, writing, self-study and role-playing helping situations. All Leaders are volunteers. Detailed information on “Becoming a Leader” is available on the LLLC Web site: [http://www.lllc.ca/become-leader](http://www.lllc.ca/become-leader).

9. d) Prolactin is the hormone responsible for the initiation of milk production (lactogenesis). The lead article in La Leche League’s parenting journal *New Beginnings* (Palmer L. “The chemistry of bonding.” 2010, 2:4-7) talks in detail about oxytocin and other hormones that are active in mother, baby and father after a birth. The journal is available on the LLLI Web site: [http://viewer.zmags.com/publication/57e09bed#/57e09bed/1](http://viewer.zmags.com/publication/57e09bed#/57e09bed/1).

10. b) Separation of mother and baby in the early months can undermine the breastfeeding relationship. Ways in which a father can be helpful and supportive of the breastfeeding relationship are outlined in the new LLLC Tear-off: “How Fathers Help Breastfeeding Happen” (No. 430-2010). It is available from your Local La Leche League Leader.
Physiologically Normal Growth: A Quiz
(November 2010)

1. The fat content of a given mother’s milk will affect how much weight her baby gains. T or F

2. “Metabolic imprinting” occurs during a baby’s first 8 days of life. This critical period may be important for programming human physiology. T or F

3. The differences in metabolism of formula compared to human milk include: prolonged insulin response and poorer uptake of nitrogen with formula. T or F

4. Epidurals and gestational age do not affect initial weight loss in baby. T or F

5. “Red Flags” which would indicate the need for a thorough evaluation of breastfeeding include: a 10% weight loss after birth, baby not regaining birth weight by 10-14 days, unusually frequent feeds coupled with low stool counts. T or F

6. All measurements of growth (weight, length and head circumference) increase at a steady pace throughout the first year. T or F

7. A baby whose weight is consistently at the 10th percentile should be supplemented, STAT. T or F

8. A baby who gains more than 8 oz per week or whose weight is consistently at or above the 97th percentile should be put on a diet and the mother instructed to withhold breastfeeding to decrease calorie intake. T or F

9. At one year of age, breastfed babies should be 2.5 times birth weight, have increased 50% in length and had a 33% increase in head circumference. T or F

10. Mothers who breastfeed are less likely to pressure babies to eat when introducing solids. T or F
**Answers**

**Physiologically Normal Growth**

BAMS p# refers to *Breastfeeding Answers Made Simple*, full citation in references.

1. **False** “Whether a mother’s milk-fat content is high or low, doesn’t matter, as the baby adjusts his milk intake accordingly. Babies whose mothers make higher-fat milk take less milk per day and those whose mothers make lower fat milk take more milk per day.” BAMS p239

2. **True** Waterland and Garza (2002) summarized their experiment on rats: “In conclusion, this study provides support for the hypothesis that nutritional stimuli during critical periods of development can modify adult chronic disease susceptibility.” Martens and Rompf (2007) “conjecture that formula-fed infants may be at risk for overfeeding in the early days...in light of current research on the association between early weight gain of formula-fed infants and adult obesity.” Mohrbacher (2010) summarizes other research documenting differences in nutrient usage between babies fed mother’s milk and formula (see answer to #3 for more details).

3. **True** Mohrbacher (2010) summarizes many research studies in *Breastfeeding Answers Made Simple* and includes the following findings (p207): poorer use of nitrogen, prolonged insulin response (which is associated with obesity) and elevated insulin levels in formula fed infants. Breastfed babies also receive the hormones leptin and adiponectin which regulate appetite and metabolism. Another study concluded that the first 8 days may be a “critical period” during which human physiology is programmed.” “This means that during this critical period breastfed babies’ greater weight loss after birth and slower return to birthweight may help activate a healthier metabolic program, which reduces the risk of overweight and obesity during childhood and beyond.”

4. **False** Martens & Rompf (2007), in a Canadian study of 812 newborns, found that percentage weight loss was greater after epidural use, and for babies of higher birth weight, who were female or had longer hospital stays. Lower weight loss was seen with increasing gestational age and exclusive formula feeding. “Parity and type of delivery were not significant.” Formula feeding was the most significant factor affecting weight loss, with formula-fed babies losing 3% less weight than those exclusively or partially breastfed. Epidurals came in second with 0.5% more weight loss if mother had an epidural during labour and delivery. In light of the information in the above answers about the importance of metabolic imprinting, this lack of weight loss in formula-fed infants could have significant health implications.

5. **True** A 10% weight loss after birth, baby not regaining birth weight by 10-14 days, unusually frequent or prolonged feeds coupled with low stool counts, along with successive weights that, when plotted on a growth chart, show a downward trend across percentiles are
all reasons to assess the breastfeeding dynamics. They are not, without further evidence, indicators for supplementation. BAMS chapter 6

6. **False** Lampl, Veldhuis and Johnson (1992) (as cited in Mohrbacher, 2010, p204) found that babies do not grow consistently in length and head circumference. Most of the time these measures are static, with spurts of growth.

7. **False** Babies who consistently chart at the same percentile, whether that be 5% or 95%, are growing normally. The percentile is simply an indication of where that baby falls in the continuum of weight range. The 50th percentile purely indicates that 49% of babies weigh less than this and 50% weigh more. It may be helpful for new parents to understand that the weights on the 50th percentile line are not magic numbers that all babies must reach to be ‘normal’ and that, unlike what we learned in school, a higher percentage is not indicative of a ‘better’ baby or greater parenting skills.

8. **False** (also see answer to #7) A baby in the 97th percentile is not automatically overweight, nor is a baby gaining faster than the average overeating. Limiting feeding of breastmilk (putting baby on a ‘diet’) is not wise as it also limits the other nutrients that the baby requires for development. Many exclusively breastfed babies gain rapidly during the first three months, then slow down considerably in the second half of the first year. The WHO growth charts* reflect this normal pattern of growth.

9. **True** “During the second 6 months of life, healthy, thriving babies average a monthly growth in length of 0.5 inch (1.27 cm) and head circumference of about 0.25 inch (64 mm). At 12 months, the average breastfed baby weighs about 2.5 times his birthweight, has increased in length by 50% and has increased head circumference by 33%.” BAMS p204

10. **True** Farrow and Blissett, 2006 as cited in Mohrbacher, 2010 p207

**References**


*WHO Growth Standards can be found at: [http://www.who.int/childgrowth/standards/en/](http://www.who.int/childgrowth/standards/en/)*