



## Keeping In The LLLoop

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### Radiologic Procedures: Walking Through the Question

by Jennifer Peddlesden

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Mothers often ask if they must wean before having a medical diagnostic scan or x-ray. In most situations, weaning is not necessary. When supporting a mother to breastfeed, it can be helpful to provide her with information about radiologic procedures for her to discuss with her doctor and thereby make an informed decision.

#### Step One: Gather Information

The first step is to gather information about the type of testing that is being recommended. Useful information to collect is the name of the test and the name of the radio-contrast compound or radio-opaque contrast media (i.e. the drug taken or injected to make parts of the body show up when x-rayed or scanned) being used.

#### Step Two: Share Information

The following list provides information that you can share with the mother about the test, should she not have this information already.

#### 1. **MRI scan (magnetic resonance imaging)**

- Best for looking at soft tissue (brain, muscle, cancers, blood vessels, etc.), and can be used for looking at bone.
- Does not use radioactive material, but does use radio-contrast medium that under magnetic field shows up body parts. Contrast is not always used but does enhance the image.
- Contrast substance used most commonly is gadopentetate<sup>1</sup> and it is not radioactive (e.g. Omniscan®, Magnevist®; see alternate names in Hale 2010)
- Less than 0.04% of the dose of gadopentetate will appear in a mother's milk and only 0.8% of that is absorbed by the baby.
- Those with claustrophobia are given conscious sedation such as midazolam.

#### 2. **CT scan (computerized axial tomography) or CAT scan.**

- Gold standard for looking at bleeding (clots), tumours, inflammation, bone or tissue injury, guiding passage of a needle etc.
- Person takes a compound that contains iodine. Multiple x-rays are taken encircling the body, and the iodine reveals bones or tissues.
- Contrast medium used is not radioactive. Most common are iohexol (Omnipaque®), iopanoic acid





(Telepaque®), metrizoate (Isopaque®) (see alternate names in Hale 2010). Contrast is not always used. Like for MRIs it is used to enhance imaging.

- The iodine in the contrast material is bound to a molecule forming the compound. The compound does not enter the milk in any noticeable amount. The compound does not release enough iodine to alter the infant's thyroid function<sup>1</sup>.

### 3. IVP (intravenous pyleogram), or lymphangiogram

- Uses contrast media similar to MRI (see above)
- Contrast medium is delivered by intravenous to show under x-ray the kidney, lymph nodes or blood vessels.

### 4. Radioactive scans

- A radioactive form of gallium (Ga), technetium (Tc), or iodine (I) is sometimes given to a mother before a test or used as a treatment.
- In order to protect the baby from ingestion of the radioactive compound in breastmilk, weaning for a period of time is recommended.
- Appropriate times for being off the breast are listed in Hale 2010 (Appendix B)<sup>1</sup>.
- Mother will need to express her milk during this time to maintain her supply.

### **Step Three: Consider Other Options**

If the mother has been told to wean her baby for one of the first three scans, she may be able to consider other options. You might provide her with printed information to take to her doctor, such as pages from *Medications and Mother's Milk*,<sup>1</sup> *Breastfeeding Answers Made Simple*<sup>2</sup> or the references below<sup>3</sup>. Has she asked her doctor if the test can be postponed or if another less invasive procedure is possible? Has the doctor shown her evidence indicating that the baby must be weaned? Has she discussed with her doctor the risks of temporary weaning?

### **Step Four: Support For A Temporary Weaning**

In the case where weaning is unavoidable, because the scan requires a radioactive contrast medium (the fourth scan above) which is not compatible with breastfeeding, the mother will require support as she decides how to cope with the situation. She may wish to prepare ahead by pumping and freezing milk for use during the hours or days it takes the radioactive substance to leave her body. "Decay time" is the total time needed for the medium to leave her body. The term "half-life" refers to both the length of time it takes for ½ of the contrast medium to leave the body and the time it takes for the level of radioactivity to decrease by 50%. Decay time is usually 5-10 half-lives (Hale 2010)<sup>1</sup>. You can help her prepare for pumping during the decay time and discarding her milk safely should that be necessary

In some cases, the mother may have to arrange for a caregiver for the baby during the decay time. Decay times and half-lives of many radioactive contrast agents are available from Hale 2010<sup>1</sup>, from <http://neonatal.ttuhscc.edu/lact/> or from the x-ray laboratory where the test is being done.

### **References:**

1. Hale T. *Medications and Mother's Milk*. Hale Publishing. Amarillo: 2010 pp 1137 ff.
2. Mohrbacher, N. *Breastfeeding Answers Made Simple*, Hale Publishing, Texas, p748
3. [http://www.acr.org/MainMenuCategories/about\\_us/committees/gpr-srp/AdministrationofContrastMediumtoNursingMothersDoc1.aspx](http://www.acr.org/MainMenuCategories/about_us/committees/gpr-srp/AdministrationofContrastMediumtoNursingMothersDoc1.aspx)  
Newman J. Breastfeeding and radiologic procedures. *Can Fam Physician* 2007; 53(4):630 – 631 Available from URL: <http://www.cfp.ca/cgi/content/full/53/4/630>



## ***Physiologically Normal Growth: A Quiz***

By Nicola Aquino, Professional Liaison Administrator for La Leche League Canada

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 10<sup>th</sup> 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 97<sup>th</sup> 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





Coming soon to a television or computer screen near you....

## LLLC National Awareness Campaign 2010



It's been a busy few months, but we are pleased to announce that the filming and editing phase of LLLC's National Awareness Campaign 2010 is complete! We have created a television public service announcement (featuring actor and breastfeeding mom Sitara Hewitt of the hit show, *Little Mosque on the Prairie*), a short film featuring interviews with breastfeeding mothers and a promotional poster.

We hope you will use these materials to help your public health department or hospital fulfill the requirements of the 10<sup>th</sup> step to Baby Friendly™ designation. The Tenth Step states:

*“Provide a seamless transition between the services provided by the hospital, community health services and peer support programs.”*

Here are a few ideas for how this campaign can help you to take that step:

- air the PSA or short film on patient channels in health care centres to let mothers know about breastfeeding support available in their communities
- screen the short film in breastfeeding and pre-natal classes to help prepare mothers for the real experience of breastfeeding
- place posters in hospitals, family resource centres and public health departments to inform families of the services that LLLC provides to support breastfeeding.

We will soon be sending more information about the campaign launch and information about how to order your copies of the poster and DVD.

LLLC is grateful for the financial support for this phase of the campaign, received from:



- Newfoundland and Labrador Department of Health and Community Services
- Yukon Territory Department of Health and Social Services
- Alberta Department of Health and Wellness
- New Brunswick Department of Health
- Calgary Breastfeeding Matters Foundation
- Bravado! Designs Inc.
- Oakville Galleries
- Many individual donors.

*Breastfeeding mothers on the set of LLLC's National Awareness Campaign film shoot*



**Stay tuned!!!**



## Answers to Breastfeeding Quiz:

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 Romphf (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 birth weight may help activate a healthier metabolic program, which reduces the risk of overweight and obesity during childhood and beyond.”
4. **False** Martens & Romphf (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 50<sup>th</sup> 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 50<sup>th</sup> 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 97<sup>th</sup> percentile is not automatically overweight, nor is a baby who is gaining faster than the average overeating. Limiting feeding of breast milk (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 birth weight, 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

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**Thanks!**

**References:**

Mohrbacher, N. *Breastfeeding Answers Made Simple* Hale Publishing, Texas, 2010

Martens, PJ and Romphf, L. Factors Associated With Newborn In-Hospital Weight Loss: Comparisons by Feeding Method, Demographics, and Birthing Procedures. *Journal of Human Lactation* 23: 233-41, 2007

Waterland RA and Garza C. Early Postnatal Nutrition Determines Adult Pancreatic Glucose-Responsive Insulin Secretion and Islet Gene Expression in Rats1 *Journal of Nutrition* 132: 357–364, 2002

\*WHO Growth Standards can be found at: <http://www.who.int/childgrowth/standards/en/>

**Womanly Art of Breastfeeding, 8th Edition:  
The Canadian Connection**

**Did you know** that our very own **Teresa Pitman**, author, magazine columnist and long-time LLLC Leader from Guelph, Ontario is a co-author of the fabulous, updated edition of this treasured classic? Did you know that more than 9,000 copies were pre-sold -- earning this special book a place on the *USA Today* Bestseller List?

*The Womanly Art of Breastfeeding, 8<sup>th</sup> edition*, is a complete breastfeeding guide for moms you are supporting. It makes a great door prize for pre-natal and breastfeeding classes or a gift for a friend. Order your copy today from the Amazon.ca link at [www.LLLC.ca](http://www.LLLC.ca) and support LLLC with your purchase!



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