

Issue 27
June 2006



THE NEWSLETTER OF THE BABY FRIENDLY INITIATIVE IN IRELAND

BFHI LINK



Congratulations to the Rotunda Hospital, Dublin and the Maternity Services of University College Hospital, Galway who were presented with their Baby-friendly National Award on June 14th by Mr Sean Power, TD, Minister of State at the Department of Health and Children.

Ireland now has five hospitals with baby-friendly status. Approximately one-third of births in Ireland are in baby-friendly hospitals. This percentage is similar to that of Northern Ireland and Wales, though we are a bit behind Scotland who have 58% of their births in baby-friendly hospitals. The target in the National Breastfeeding Action Plan is for 50% of births to be in baby-friendly hospitals by 2010, so we still have some work to do.

 ★ **Portiuncula Hospital, Ballinasloe, Co. Galway is the first health facility to be awarded a Breastfeeding Supportive Workplace Silver Award.**
 ★ The criteria for the Silver level award go beyond the requirements of the legislation on lactation breaks. In addition to facilities and time it includes a criteria that all staff in the organisation are aware of the importance of breastfeeding and how they can support colleagues who are breastfeeding. Information on participating in the Workplace project is available on the BFHI website or from the HPH office.
 ★



All-Ireland Breastfeeding Conference 2006

The Health Service Executive, Health Promotion Agency (Northern Ireland) and the Association of Lactation Consultants in Ireland invite you to the second all-Ireland Breastfeeding Conference on Friday 6th October 2006 in The Conference Centre, Croke Park, Dublin.

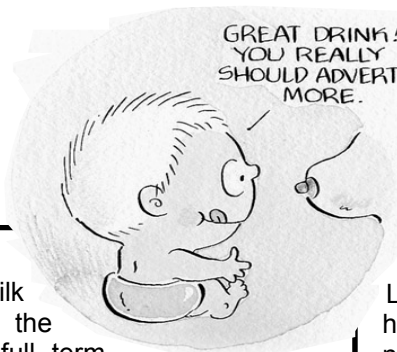
Theme: Breastfeeding in a Bottle Feeding Culture

Keynote speaker: Dr. Jack Newman, Toronto based Paediatrician.
 Also expert Irish and UK speakers.
 For information and bookings please contact:
 Naomi Boland, Health Promotion Dept., Block B, Civic Centre, Main Street, Bray, Co.Wicklow Ph: 01 2744295 naomi.boland1@maild.hse.ie



**Focus in this issue:
Composition of breastmilk**

Mother's milk is much more than just food for an infant.



It contains more than 130 different constituents that include both bio-active and nutritional components.

Fats

The fat in human milk provides about half the energy needs of the full term infant. Preterm milk is even higher in fat.

Human milk contains cholesterol, phospholipids, mono, di- and tri-glycerides, glycolipids, other sterol esters and free fatty acids. Absorption of these fats is aided by lipase and taurine; both present in milk. Human milk is rich in long chain polyunsaturated fatty acids, vital for nerve and brain development.

Fats or lipids in human milk also have protective properties attacking bacteria and viruses. Prostaglandins assist many physiological functions including circulation, gastric secretion, electrolyte balance, and release of enzymes.

Fat content of the milk changes during a feed with a higher fat content as the breast becomes less full. In general, the longer the time between feeds, the lower the fat content. Baby-led feeding allows the infant to adjust to the fat content in the milk and regulate their fat intake - feeding more or less so the total energy intake is similar.

Fat content only varies slightly with maternal intake. Human milk fat comes from three sources: mother's current dietary intake, fat stores, and synthesised from glucose in the breast. Mothers can provide good milk even if she has a low fat diet and low fat stores.

The fat-rich hind milk can have up to five times the fat content of foremilk, therefore let the baby finish one breast before switching to the other breast. If the milk is left to stand this "cream" at the top can be used to enrich a tube feed for a small or preterm infant needing more calories.

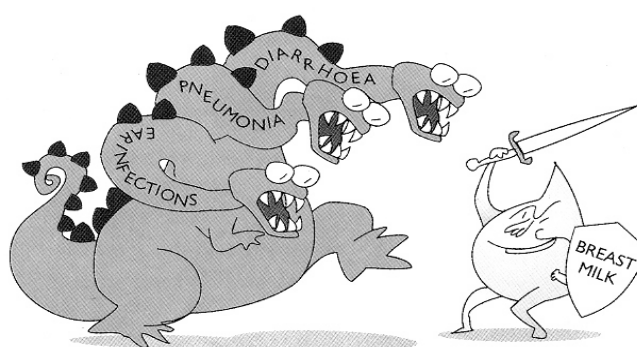
Sugars

Lactose is the main carbohydrate in human milk. It is necessary for brain and nervous system development; provides a favourable environment for 'good' gut bacteria; assists absorption of calcium, iron and other minerals; assists water balance in the milk and in the infant.

More than 100 different types of oligosaccharides are found in human milk and have a protective effect in the respiratory, gastrointestinal and urinary tracts. Oligosaccharides retain their protective properties even if heated.

Lactase, the enzyme to digest lactose, is produced by the brush border of the intestine. An infection can damage the brush border and lead to poor lactose tolerance with frothy acidic stools and pain. Human milk contains anti-inflammatory and growth factors to promote recovery of the intestine. Restricting breastfeeding is of no advantage to the baby if lactose intolerance is suspected.

Galactosemia, where the infant lacks the liver enzyme to metabolise galactose, is a very rare condition. The baby becomes ill soon after lactose containing feeds are given. This disease is included in the infant metabolic screening tests.



Proteins

The protein level in human milk is lower than other species because humans grow comparatively slowly. It is of high quality and is not affected by maternal nutritional status. Human milk protein is easily digested. Colostrum and preterm milk is higher in protein than mature milk due to the high levels of protective factors and lower volume.

Lactoferrin, lysozyme, cytokines, enzymes, immunoglobulins, and hormones are present also. The non-protein nitrogen fraction of human milk includes free amino acids (such as taurine, cysteine and methionine), peptides and nucleotides. Epidermal growth factor stimulates the growth of intestinal villi improving nutrient absorption and protecting from infections and allergens.

Did you know?

Weaning milk produced as breastfeeding frequency decreases has a high level of immune factors. Human milk is high in cholesterol which may help the development of the nervous system. Mother's cholesterol level is not related to cholesterol content in the milk.

A breastfeeding infant ingests more than a hundred million white cells a day that can kill pathogens. Some of these white cells can persist for months providing some of the lasting protection.

A newborn who does not receive colostrum at birth is a newborn at risk. It is considered the baby's first immunisation.

Human milk contains anti-oxidants to protect the infant from cellular damage.

Human milk is a complex 'package' of many constituents that act together to protect, develop and nourish the infant.

If the infant cannot receive his own mother's milk either at the breast or expressed then human milk from a donor milk bank is the next best choice. Non-human milk should only be considered when human milk is not available. Human milk is especially important for preterm or ill infants.

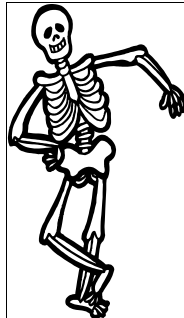
Calcium

Calcium levels are fairly constant throughout lactation. Calcium is well absorbed and is sufficient to meet the infant's requirements.

Absorption from cows' milk is poor so figures for calcium requirements are higher for infants fed cows' milk rather than human milk.

Lactose in the milk enhances the infant's absorption of calcium.

Calcium in human milk comes from the mother's stores and is generally not influenced by the mother's diet or maternal supplements.



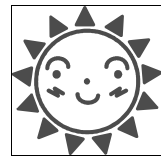
Vitamin D

The concentration of vitamin D in human milk is dependent on the mother's vitamin D status. Maternal exposure to sunlight raises the vitamin D content of her milk.

Full-term infants of mothers with good vitamin D levels are born with vitamin D stores that last about 8 weeks. After then, the infant needs sunlight to produce their own vitamin D or supplements.

Sunlight on the face for at least 2 hours a week can provide sufficient vitamin D for a fair skinned infant or woman.

Infants who are dark skinned, or kept covered from the sunlight, or born to vitamin D deficient mothers, and preterm infants are at risk of vitamin D deficiency.



Iron

The iron content of human milk is stable and unaffected by mother's iron levels. An anaemic mother has the same amount of iron in her milk as does a non-anaemic mother.

If the infant receives iron supplements, less iron is absorbed from the mother's milk. High iron content in the gut (from supplements if unnecessary) favours bacterial growth.

Infant iron stores are used up more quickly in infants fed cows' milk due to poor availability of the iron from cows' milk and micro haemorrhages in the intestine.

Cord clamping at 2 minutes after the shoulders deliver increased the infant's iron stores at 6 months compared to clamping at 10 seconds ($p=0.0002$), according to a random controlled trial, with no increase in maternal blood loss.



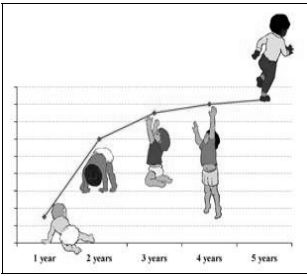
Chaparro CM et al. Effect of timing of umbilical cord clamping on iron status in Mexican infants: a randomised controlled trial. *Lancet* 2006; 367:1997-2004

Further Reading

Hanson L. *Immunobiology of Human Milk: how breastfeeding protects babies*. Pharmasoft Publ. Texas. 2004
Lawrence R. *Breastfeeding: A Guide for the Medical Profession*. 6th Edition. Missouri, Mosby, 2005
WHO, Nutrient adequacy of exclusive breastfeeding for the term infant during the first 6 months of life. 2002

NEWS and VIEWS

WHO Child Growth Standards are now available. The new standards prove that differences in children's growth to age five are more influenced by nutrition, feeding practices, environment, and healthcare than genetics or ethnicity. These standards are based on the breastfed child as the norm for growth and development. This brings coherence for the first time between the tools used to assess growth, and national and international infant feeding guidelines which recommend breastfeeding as the optimal source of nutrition during infancy. This will now allow accurate assessment, measurement and evaluation of breastfeeding and complementary feeding. For more details visit <http://www.who.int/childgrowth/en/> A future issue of BFHI Link will address growth in more detail.



Check out the new 'Healthykids' website from Australia - www.healthykids.nsw.gov.au. In particular the breastfeeding sections. They were put together by the New South Wales Health Breastfeeding Project. A great link to most major infant feeding documents.
Feeding Infants and Toddlers - <http://www.healthykids.nsw.gov.au/topics/2002.html>
Breastfeeding for health professionals : <http://www.healthykids.nsw.gov.au/infopages/2065.html>
Breastfeeding for parents : <http://www.healthykids.nsw.gov.au/infopages/2061.html>
Introducing solids and feeding toddlers - <http://www.healthykids.nsw.gov.au/infopages/2064.html>

Soy protein infant formulae and follow-on formulae. *J Pediatr Gastroenterol Nutr.* 2006 Apr;42(4):352-61. This comment by the European Society for Paediatric Gastroenterology Hepatology and Nutrition (ESPGHAN) Committee on Nutrition summarizes available information on the composition and use of soy protein formulae as substitutes for breastfeeding. It states that soy protein formulae can be used for feeding term infants, but they have no nutritional advantage over cows' milk protein formulae and contain high concentrations of phytate, aluminum, and phytoestrogens (isoflavones), which might have untoward effects. There are no data to support the use of soy protein formulae in preterm infants. Indications for soy protein formulae include severe persistent lactose intolerance, galactosemia, and ethical considerations (e.g., vegan). Soy protein formulae have no role in the prevention of allergic diseases and should not be used in infants with food allergy during the first 6 months of life. There is no evidence supporting the use of soy protein formulae for the prevention or management of infantile colic, regurgitation, or prolonged crying. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&dopt=Abstract&db=PubMed&list_uids=16641572

BFHI Link is written by Genevieve Becker, National Co-ordinator of BFHI, and reviewed by members of the BFHI Advisory Committee.

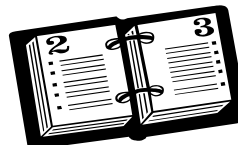
We welcome your news and suggestions.

Contact the BFHI Co-ordinator,
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Web site: www.hphallireland.org then go to Links

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Share your achievements with others through a poster at the HPH Annual Conference.



Diary Dates

- July 12-16th **International Lactation Consultant Association Annual Conference**, Philadelphia, USA. Contact: www.ilca.org
- Aug 1st-7th **World Breastfeeding Week, Code Watch: 25 years of protecting breastfeeding.** <http://worldbreastfeedingweek.org/>
- Oct 1st-7th **National Breastfeeding Week** including joint All-Ireland/ALCI Conference Oct 6th, Dublin.
- Oct 7th **Association of Lactation Consultants in Ireland Workshop**, Dublin
- Oct 19-20th **Health Promoting Hospitals National Conference**. Wexford. Contact: 01-6465077
- Nov 28-29th **BFI UK Conference**, Cardiff. www.babyfriendly.org.uk/conference.asp

Mother's Milk is Magic

Each mother produces milk special to her own baby. If your baby is born early, your milk has more protein, energy, and minerals such as iron and sodium than the milk you would produce if your baby was born full-term. If you have twins you produce twice as much milk.

You do not need to eat special food to make good milk. Mother's milk will be of good quality no matter what you eat. All mothers need to take care of themselves because being a mother is hard work.

At the beginning of a feed your milk is more watery to satisfy your baby's thirst. The rest of the feed has more fat in it and this helps your baby to feel full.

Human milk is for human babies. It helps baby's brain to develop quickly and the rest of the body to grow slowly. Cows' milk helps a calf to grow long bones and develop muscles quickly because a calf reaches full adult size in two years. We do not develop full adult size for at least 16 years! Most infant formula is based on cows' milk.



Colostrum is the first milk you produce. It is thick and gold coloured because it is rich in everything your baby needs. Your baby's tummy is only the size of baby's fist. Colostrum comes in very small amounts because there is not room for large amounts of milk in this small tummy.

This first milk is full of protection from the germs and illness around the baby. It is the baby's first immunisation. Giving water or formula can reduce the protection from mother's milk.

Babies grow fine with only mother's milk for the first 6 months. They do not need water, juice, spoon feeds or formula to replace mother's milk.



A mother's own milk is best for her own baby, either from the breast or expressed milk. If a mother's own milk is not available, then donor milk from a milk bank is the next best choice. A milk bank is a bit like a blood bank. Mothers donate their extra milk, it is tested and pasteurised to kill any germs, and then given to babies who need it. Human milk is very valuable for ill babies.