

Media Release

Will the wonders of human milk never cease?

Incredibly, research into both breastmilk and breastfeeding continue to generate fascinating results. Medela's 9th International Breastfeeding and Lactation Symposium once again succeeded in unveiling and sharing new discoveries which impact not only on the health outcomes of the premature infant, but on the economic implications for society as a whole. Hosted in Madrid, Medela welcomed 9 renowned experts, and 530 participants from 51 countries making this its most international symposium to date.

Obesity is one of the greatest public health challenges of the 21st century. **Professor Rafael Pérez-Escamilla, Professor of Epidemiology & Public Health and Director, Global Health Concentration, Yale School of Public Health**, has been investigating both the biological plausibility and the epidemiological evidence for a link between breastfeeding and obesity. Although the results are not conclusive there are a number of factors in which could indicate a positive relationship between the two. Breastfed babies are able to regulate their intake; breastmilk has a better insulin profile with lower protein than formula; breastfed babies are able to develop taste preferences through their mother's milk and finally, breastfed babies gain less weight than formula fed babies.

Through her work, **Dr Jacqueline Kent (University of Western Australia)** has succeeded in redefining the boundaries for 'normal' breastfeeding. There is a wide range of 'normal' when it comes to exclusive breastfeeding with respect to how long infants feed, how long each breastfeeding session takes, and how much milk the infant takes in each breastfeeding session. As each adult is different, so is each baby. As infants grow from 1 to 3 months, they take fewer, faster, larger breastfeeds, but interestingly, the amount they take for a whole day stays consistent up to 6 months. One of the key outcomes of this research is the impact on the mother; measuring breastfeeding patterns helps reassure parents that their breastfeeding behaviour is normal, and can maintain or improve the confidence of breastfeeding mothers.

For a very low birth weight (VLBW) infant, the first 14 – 28 days of life are crucial. **Professor Paula Meier** and her team at the **Rush University Medical Center in Chicago** have drawn the simple conclusion that the higher the dose of human milk given during that important period, the less morbidity linked problems that will occur. Each addition 10mL of human milk received by VLBW reduces the risk of late onset sepsis and its associated costs by 19%. Exclusive human milk for the first 14 days of life reduces 3-fold the risk of Necrotizing Enterocolitis (NEC), the single biggest killer of babies weighing less than 1500 kg.

The Unique Components of Human Milk

Breastfeeding has been associated with a small but consistent advantage for later IQ development. **Professor Berthold Koletzko** from the **University of Munich's Medical Centre** in Germany has been investigating the role of lipids in human milk and their

contribution to functionality and the development of the baby. Studies have shown that the level of consumption of long chain fatty acids by babies has an impact on health, brain and immune development. As a result, it has been recommended that pregnant and breastfeeding mothers should consume an average of 200g of DHA per day (the equivalent of 2 meals per week based on cold water oily fish such as salmon or mackerel). Lactating women that do not consume fish e.g. women following vegetarian or vegan diets, are advised to take supplements with DHA.

Dr Lukas Christen, who has been working at the **Human Lactation Research Group at the University of Western Australia** has devoted his research to finding a new method of pasteurization for human milk which retains the bioactive components (e.g. Proteins) which are heavily reduced as a result of traditional pasteurization methods (the Holder method). Tests have shown that ultraviolet-C irradiation not only matches the safety standards of current pasteurization methods by de-activating bacteria, but it significantly improves the retention of bioactive components in human milk. Although further analysis is required, UV-C pasteurization certainly seems to have the potential to further improve the quality of donor human milk.

The value of human milk in the NICU

The importance of the use of human milk in the NICU is finally being understood with a steady increase in its use over the past decade. Despite the cost benefits associated with using human milk for the pre-term babies, there is still a reluctance to prioritise its medicinal characteristics, particularly in relation to NEC. **Professor Jae Kim** from the **Paediatrics Department of the UC San Diego Medical Center** spoke about his investigations into the optimal delivery of human milk to those who need it most.

Professor Shoo Lee, from the University of **Toronto**, is a strong supporter of Family Integrated Care for pre-term infants, where parents are the primary care givers. In his mission to reduce the rate of NEC in Canada, he has taken a lot of inspiration from Japan where rates have been reduced to 0.5% nationally. Practice there revolves around the exclusive use of human milk in NICU as well as the aggressive feeding of pre-terms.

Dr Nadia Raquel García, from the **Department of Neonatology in the 12 October Hospital** in Madrid has devoted her research to the role of a contemporary milk bank in the NICU. Her studies have shown that the use of donor milk in Neonatal Units improves the clinical course of preterm and ill newborns in the short and long term. Similarly it has a positive impact on breastfeeding and is cost-effective.

Tribute to Winthrop Professor Peter Hartmann

After 42 years of research Peter Hartmann is still bemused by the fact that we know so little about the lactating mammary gland; "How is it that we know so little about an organ that consumes more than 30% of daily energy intake and contributes so much to intellectual, physical development and health of both the mother and baby"? In a tribute to the recently retired Professor, Michael Larsson, Chairman of Medela, paid homage to Peter Hartmann's defining trail of research, as well as his curiosity, integrity and desire to innovate.

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About Medela:

Founded in 1961 by Olle Larsson and headquartered in the Canton of Zug, Switzerland, Medela is owned by the Larsson-Rosenquist Family Foundation and continues to grow under the leadership of the Larsson family. Medela concentrates on two divisions: "Breastfeeding", leading in the development and production of breastfeeding products, and "Healthcare", engineering and manufacturing highly innovative medical vacuum technology solutions.

Medela conducts fundamental research together with leading scientists, medical professionals and universities, and uses the research results in the development of its products. Medela has 17 subsidiaries in Europe, North America and Asia, and together with independent partners distributes its products in more than 90 countries. The company employs around 1,500 staff worldwide, 330 of whom are located in the Canton of Zug. www.medela.com