

Media Release

Breast milk - the powerful protective shield nature provides for newborns

Encased in the womb, a baby is nurtured, fed and protected. From birth, breast milk takes over these responsibilities, providing the newborn with the most powerful protective shield which functions as a natural defense against diseases and illnesses through the transfer of immune cells.

Newborns build their immunity against diseases and illnesses through the accumulation and creation of immune cells. More than 130 prebiotics can be found in breast milk and help protect a baby's gut from different types of microbes. As well as containing over 415 proteins, of which some can help to kill pathogens, breast milk also contains varying levels of immune cells. With radar-like characteristics, these cells appear to be able to detect illness before it manifests, and multiply as a result. When both mother and infant are healthy however, the presence of immune cells in human milk is reduced.

The broader understanding of the mechanisms of immune cells has come from research carried out by Foteini Hassiotou at the University of Western Australia. Her research has led to the discovery of stem cells in breast milk, which are amongst the millions to billions of cells ingested by the infant through breastfeeding every day. It is thought that stem cells have the ability to act as a type of "internal repair system" in the baby's body. Research is ongoing.

Continuing in its responsibilities, breast milk also contains essential fats that antimicrobial and support the optimal development of the brain. The brain is the fattest organ in the body, and brain mass almost doubles in the first 6 months. At 2 years it reaches more than 80% of adult size. Studies show that the fatty acid composition in breastmilk has an impact on child development, breastmilk supplies fatty acids such as DHA which have positive effects later in life.

Latest research further reveals that foods a mother eats during pregnancy and breast feeding flavor amniotic fluid and milk. This may program later food preferences of a baby. The vast majority of those thousands of different ingredients in breastmilk such as proteins, fats, lactose, vitamins, iron, minerals, hormones and enzymes cannot be replicated artificially. On top of it, breastmilk is a living substance the composition of which changes daily to meet the growing needs of a child for its optimal development.

At Medela's 10th Breastfeeding and Lactation Symposium on 17-18 April 2015 in Warsaw, Dr Foteini Hassiotou will present her latest stem cell related findings, which revolve around their migration and functional integration into organs. PhD Candidate Anna Cannon and Associate Professor Donna Geddes from the University of Western Australia will discuss results of studies around appetite control factors in human milk and the potential influence of the hormones in breastmilk, such as leptin, on the reduced risk of obesity later in life.

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More information under www.medela-symposium.com

Registration for the media (press conference, webcast, attendance) under
<http://www.medela.com/IW/en/breastfeeding/for-professionals/congress2015/media/media-registration.html>

About Medela:

Founded in 1961 by Olle Larsson and headquartered in Switzerland, Medela today is led by his son Michael Larsson. Medela concentrates on two business units: "Breastfeeding", which is leading in the development and production of breastfeeding products, and "Healthcare", which engineers and manufactures highly innovative medical vacuum technology solutions. Medela conducts basic research in partnership with leading scientists, medical professionals and universities, and uses the research results in the development of its products. Medela has 18 subsidiaries in Europe, North America and Asia, and together with independent partners distributes its products in more than 90 countries. The company employs over 1,500 staff worldwide, 330 of whom are located in the Canton of Zug, Switzerland. www.medela.com

Overview:

Speakers and topics at Medela's 10th International Breastfeeding and Lactation Symposium 2015

Appetite regulation of breastfed infants. Assoc Professor Donna Geddes

Donna Geddes' presentation "Appetite regulation of breastfed infants: milk composition, appetite control factors and gastric emptying" will shed more light on how infants self-regulate their nutrient intake and the mechanisms that may be involved, helping to explain the risk of overweight and obesity later in life.

Breastmilk leptin. PhD Candidate Anna Cannon

Anna Cannon will speak about "The effect of breastmilk leptin on breastfeeding behaviour and gastric emptying" and will discuss the potential role of hormones such as leptin for appetite regulation in breastfed infants.

Stem cells boosting early infant development. Dr Foteini Hassiotou

Foteini Hassiotou will describe in her presentation "Breastmilk imparts the mother's stem cells to the infant: boosting early infant development?" the fate of the millions of cells a breastfed infant ingests every day: New research with a mouse model provides first evidence of the survival of milk stem cells in the neonate, and their migration and functional integration into organs.

Exclusive human milk feeding in a NICU. Dr Maria Wilinska

Maria Wilinska's presentation the "Effect of implementing a program of exclusive human milk feeding in a NICU" provides the analysis of the successful introduction of the 'Program of Early Stimulation of Lactation' in all grade III neonatology and obstetric centers in Poland. No formula is used thanks to the availability of pasteurized milk from the first three human milk banks in Poland.

Promoting exclusive breastfeeding. Professor Cindy-Lee Dennis

Cindy-Lee Dennis discusses in her presentation "Promoting exclusive breastfeeding: current evidence-based practices and future ideas" the fact that today still less than 40% of the world's infants benefit from exclusive breastfeeding for the first six months. She describes research based interventions that can be implemented in our settings to improve exclusive breastfeeding rates.

Program for family integrated care. Professor Matthias Keller

Matthias Keller asserts in his presentation "NeoPAss®, a multi-professional clinical care pathway program for family integrated care" that pathways which enable the transfer of knowledge to daily clinical practice are not well established in peri- and neo-natal care. He will present a multi-disciplinary management tool for family integrated care and parental education.

Postnatal growth restriction and individualized fortification. Professor Christoph Fusch

Christoph Fusch emphasises in his presentation "Postnatal growth restriction and individualized fortification" that breast milk composition varies greatly, putting a significant percentage of prematurely born infants at risk for postnatal growth retardation. He proposes target fortification, which will benefit infant growth rates, and proposes a scientifically based measurement schedule.

Human milk & breastfeeding in critically ill infants. Professor Diane L. Spatz

Diane Spatz will present "Evidence based strategies to ensure human milk & breastfeeding in critically ill infants". This ten step strategy has now been implemented in NICUs worldwide, a replicable model of care which has been shown to enhance human milk and breastfeeding outcomes, for even the most critically ill infants.

Prevention of NEC in the NICU. Professor Shoo Lee

Shoo Lee's presentation "Human milk and prevention of NEC in the NICU" will review the literature on the benefits of human milk for sick babies in the NICU. It will focus on preterm babies who are at risk of necrotizing enterocolitis, the value of human milk to prevent it, and strategies that have been implemented in Canada to reduce the NEC rate by more than 50% in the last three years.