

Human Lactation Research

Research overview

Led by Associate Prof Donna Geddes, the Human Lactation Research Group actively investigates human milk; its synthesis, composition, removal from the breast and effects on the infant.

Research highlights

The milk ejection reflex is critical to the release of milk from the breast allowing removal by the infant or pump. Several transient milk ejections occur during breastfeeding and pumping. It has been assumed that one reason breastfeeding is more effective than pumping is that the baby elicits a different milk ejection pattern. Research associate Hazel Gardner has debunked this myth by showing milk ejection patterns are the same for a mother whether she is breastfeeding or pumping. This suggests the reflex is programmed in the mother either during pregnancy or soon after birth.

Nipple pain is the second most common reason for early cessation of breastfeeding. We have previously shown that for mothers experiencing pain, two thirds of their infants exert stronger intra-oral vacuums than infants that do not cause pain. Often nipple shields are used to relieve the pain and prevent trauma however we examined an infant where pain was not reduced by nipple shield use. The infant's sucking vacuums were 307 % higher than reference values, which explained the ineffectiveness of the management. A clinical screening tool is needed to enable prompt identification of these infants.

Maternal confidence and perception of milk supply are known to affect the duration of breastfeeding. Measurement of breastmilk production by test weighing the infant in the home is relatively easy, however this tool is rarely employed in the clinical setting due to the notion that it undermines maternal confidence. Dr Jacqueline Kent has shown that mother's breastfeeding confidence was maintained after measuring their milk production (66%) and those mothers who were not confident (11%) increased their confidence after measurement. Measurement of 24hr milk production is also a valuable tool to identify true low milk supply.



Research achievements

Dr Sharon Perrella completed her PhD thesis, which investigated the effects of human milk composition, mother's own milk, pasteurised donor milk and fortified human milk on gastric emptying in preterm infants using ultrasound imaging. This information is of great value to the neonatologist who tailors the milk and feeding regime of these fragile infants to accommodate the immature gastrointestinal system. Her work was considered so novel and rigorous that she received a Distinction from the Vice-Chancellor of The University of Western Australia.

THE TEAM

Chief Investigator

Assoc/Prof Donna Geddes

Honorary Research Fellow

Emeritus Prof Peter Hartmann

Post-Doctoral Fellows

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Dr Ching Tat Lai

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