

Fast-acting mothers' milk for healthier babies

May 23 2013



Human breastmilk responds quickly to protect the child when there is an infection in mothers or babies, according to new international research led by The University of Western Australia.

The research helps to explain why [babies](#) who are exclusively breastfed have fewer infections.

In a paper published in the journal *Clinical and Translational Immunology*, lead author UWA's Assistant Professor Foteini Hassiotou and her colleagues from UWA and University Freiburg in Germany show how the number of [immune cells](#) (leukocytes) in breastmilk changes during the course of breastfeeding as well as in response to

maternal and infant infection.

The team recruited 21 [breastfeeding mothers](#) and their babies at different stages of lactation, from a few days after birth to several years into [lactation](#). The researchers first established the normal range of leukocytes in the milk of [healthy mothers](#) and babies. They then found that the leukocytes in breastmilk increased rapidly when either the mother or her baby had an infection and returned to normal levels when the infection was over. Remarkably, this response was also seen when only the baby had an infection and the mother was asymptomatic, reinforcing the importance of breastfeeding for the protection of the baby.

"In places where families don't have ready access to medicine, particularly [developing countries](#), breastfeeding may be a determining factor in infant recovery and survival," the study authors write.

"Formula doesn't offer this protection and the ability to adjust to infant needs.

"These findings present new information that is relevant to updating [public policy](#) on early infant nutrition that maximises immunological development and protection. At the same time, they offer new grounds for examining the mechanisms behind the very low rates of symptomatic HIV and cytomegalovirus disease in infants exclusively breastfed by infected mothers."

The study also found that exclusive breastfeeding was associated with a higher baseline level of leukocytes in breastmilk under healthy conditions. This may be because of the overall suckling time on the breasts and suggests that babies that are not exclusively breastfed receive not only lower breastmilk volumes but also breastmilk that contains fewer [leukocytes](#).

Assistant Professor Hassiotou and her colleagues point out that the human lactating breast is the only metabolically significant organ of the body for which a medical test does not exist - yet cow's udders are often tested. The measurement of breastmilk leukocyte levels now provides a new diagnostic tool for the health of the lactating breast and of the breastfed infant.

Provided by University of Western Australia

Citation: Fast-acting mothers' milk for healthier babies (2013, May 23) retrieved 27 April 2024 from <https://medicalxpress.com/news/2013-05-fast-acting-mothers-healthier-babies.html>

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