

Can genetic analysis of breast milk help identify ways to improve a newborn's diet?

June 4 2013



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The composition of breast milk varies from mother to mother, and genetic factors may affect the levels of protective components in breast milk that could influence a newborn's outcomes. The potential to perform genomic studies on breast milk samples is explored in a Review

article in *Breastfeeding Medicine*, the Official Journal of the Academy of *Breastfeeding Medicine*.

Kelley Baumgartel and Yvette Conley, University of Pittsburgh, PA, reviewed the scientific literature to determine whether breast milk is an appropriate source for genetic material—DNA and RNA—to perform [gene expression](#) and epigenetic studies.

In the article "The Utility of Breast Milk for Genetic or [Genomic Studies](#) : A Systematic Review," the authors describe the potential value of the genetic information obtained from breast milk, which can be collected easily and noninvasively. It could lead to a better understanding of the variability in breast milk and to strategies for optimizing the neonatal diet through fortification of donor breast milk, supplementation of the mother's diet, or maternal lifestyle changes that would affect [breast milk](#) composition.

"The great majority of mothers produces milk that matches the needs of her infant amazingly well," says Associate Editor David S. Newburg, PhD, Professor, Department of Biology, Boston College, Chestnut Hill, MA. "But for those few infants with exceptional needs, such as premature infants, or for mothers with uncommon mutations whose milk lacks the full complement of beneficial components, genetic and [genomic analysis](#) would both identify the mismatch and provide the information to produce a personalized complementary fortifier or supplement."

More information: The article is available free on the *Breastfeeding Medicine* website at <http://www.liebertpub.com/bfm>.

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Citation: Can genetic analysis of breast milk help identify ways to improve a newborn's diet? (2013, June 4) retrieved 25 April 2024 from <https://medicalxpress.com/news/2013-06-genetic-analysis-breast-ways-newborn.html>

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