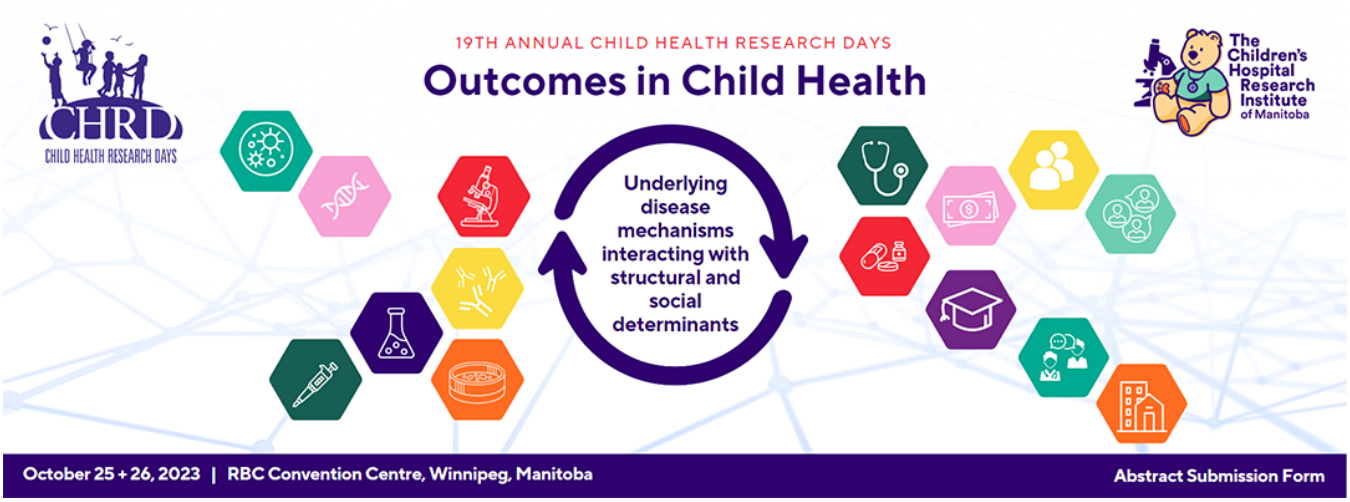

CHRD 2023: Abstract Submission Form

Submitter Name
Spencer Ames

Presenter Name
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Presenter Status
Masters Student

Research Category
Community Health / Policy

Role in the project
Design
Analyze Data
Write Abstract

Title
Investigating the relationship between infant feeding practices and inflammation-associated serum biomarkers of one-year-old infants in the CHILD Cohort Study

Background
Breastfeeding and human milk consumption are associated with immune system development; however, the impact of infant feeding practices on this relationship is unclear.

Objective
We aimed to understand how current human milk feeding status is related to immune activity, and how past feeding practices (human milk feeding duration, exclusivity, and method - directly from the breast, or pumped and bottled) are related to immune development, in one-year-old infants.

Methods
We studied a subset of 605 one-year-old infants from the CHILD Cohort Study. Infant feeding was captured from hospital birth records and parent questionnaires. Ninety-two biomarkers reflecting immune system activity and development were measured in infant serum using the Olink Target 96 Inflammation assay. Associations were determined using multivariable regression (adjusted for sex, time until blood sample centrifugation, participant study site), with adjustment for multiple comparisons.

Results
Forty-four percent of infants were still breastfeeding at time of blood sampling. Compared to infants who were never breastfed or had stopped breastfeeding, those who were still breastfeeding had higher levels of serum Fibroblast Growth Factor 21 (FGF-21, adjusted standardized β-coefficient=0.56, 95%CI=0.41-0.72),

Cluster of Differentiation 244 (CD244, β=0.35, 0.19-0.50), Chemokine Ligand 6 (CXCL6, β=0.34, 0.18-0.50), Chemokine Ligand 20 (CCL20, β=0.26 ,0.09-0.42), and extracellular newly identified receptor for advanced glycation end-products binding protein (EN-RAGE, β=-0.16, -0.29- -0.03). Among infants not receiving their mother's milk at the time of blood sampling, human milk feeding exclusivity, method (at 3 months of age), and total duration were not associated with any biomarkers.

Conclusion
Current human milk feeding status, but not prior infant feeding practices, is associated with changes in immune biomarker profiles at one year of age. In addition to informing new hypotheses about the impact of breastfeeding on immune development, these results highlight the importance of including current human milk feeding status in immune-system-focused infant serum proteomic studies.

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