

## Infant feeding strategy affects gut microbial composition, immunity, and metabolism

Carolyn Slupsky

University of California, USA

The long- and short-term health benefits of breast-feeding have long been recognized. Indeed, breast-feeding is associated with lower incidences of necrotizing enterocolitis and diarrhea in early life, in addition to lower incidences of inflammatory bowel diseases, type-2 diabetes, obesity, and cardiovascular disease later in life. The mechanism by which breast-feeding imparts these protective measures is poorly understood partly due to a lack of available analytical methods to measure the comprehensive effects of feeding practices on infant metabolism. Rhesus macaque monkeys are widely used as models for human physiology and behavior given their genetic and developmental similarities to humans, as well as similar susceptibility to disease. The early nutritional requirements of infant macaques closely match those of human infants, making them ideal for studies on infant nutrition and metabolism. Comprehensive metabolic, cytokine, and microbial profiling have been accomplished on infant rhesus macaques either bottle-fed, a standard infant formula or breast-fed. We observed substantially different gut microbial patterns, cytokine profiles, and overall metabolism in formula-fed infants compared with breast-fed. These studies highlight a link between early infant feeding practices and the potential development of metabolic diseases later in life.

### Biography

Carolyn Slupsky is currently a Faculty member at the University of California, Davis with a cross appointment in the Departments of Nutrition and Food Science and Technology. Her research background includes metabolomics, protein structure and function, receptor-ligand and protein-protein interactions, structure-aided drug design, and software development. She previously served as Chief Scientific Officer for Chenomx Inc., developing software for metabolite analysis by NMR, and pioneered the technique of targeted profiling by NMR. She has published more than 57 manuscripts and book chapters.

[csilupsky@ucdavis.edu](mailto:csilupsky@ucdavis.edu)