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Human Milk Oligosaccharide Profiles and Associations with Maternal Nutritional Factors: Results from a Scoping Review**Caren Biddulph***Milk Banc research group, University of the Sunshine Coast (USC), Australia*

Background: Human milk oligosaccharides (HMOs) are complex unconjugated glycans associated with positive infant health outcomes. This study has examined current knowledge of the effect of maternal diet and nutritional status on the composition of HMOs in breast milk.

Methods: Using the PRISMA-ScR guidelines, a comprehensive, systematic literature search was conducted using Scopus, Web of Science, Global Health (CABI), and MEDLINE. Titles and abstracts were screened independently by two reviewers against predefined inclusion and exclusion criteria.

Results: Fourteen studies met the inclusion criteria and reported on maternal dietary intake ($n = 3$), maternal body composition indices ($n = 9$), and dietary supplementation interventions ($n = 2$). In total, data from 1388 lactating mothers (4011 milk samples) were included. Design methodologies varied substantially across studies, particularly for milk sample collection, HMO analysis, dietary and body composition assessment.

Conclusion: Overall, this review has identified potential associations between maternal dietary intake and nutritional status and the HMO composition of human milk, though abundance and sufficiency of evidence is lacking. Standardized procedures for human milk sample collection and HMO analysis, along with robust and validated nutrition assessment techniques, should be employed to further investigate the impact of maternal nutritional factors on HMO composition.

Biography

Caren Biddulph is an Accredited Practising Dietitian with a special interest in infant and paediatric nutrition. Caren completed her Nutrition and Dietetics degree (Bachelor of Science) in South Africa, followed by her Masters in Nutrition at Griffith University, Australia. After working in clinical and corporate settings, Caren then completed the postgraduate International Olympic Committee (IOC) Diploma in Sports nutrition in Geneva, and is a current PhD candidate at USC. She is a member of Dietitians Australia and is passionate about the promotion and protection of breastfeeding as the optimal source of infant nutrition.

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