TEN STEP TUESDAY

Human Milk & the Gut Microbiome

Week 3 of 3

It's Ten Step Tuesday!

The last few weeks we learned a bit about how human milk affects the gut microbiome. This will be our last week in a series with information on this fascinating subject from Jarold "Tom" Johnston, DNP, CNM, IBCLC.

- Exclusively breastfed babies have immature gut microbiomes. At birth, babies have very different proportions of specific bacteria in their gut microbiome compared to their birthing parent's. Over the first 12 months of life, the baby's microbiome shifts to strongly resemble the birthing parent's. However, this shift is accelerated by the introduction of formula or the feeding of solid foods. As soon as the baby ingests anything other than human milk, the gut microbiome changes rapidly, and it does not go back. This may explain why formula fed infants experience more autoimmune and infectious illness.

- Birth interventions affect the microbiome. Cesarean section birth reduces microorganism exposure. While infants born via vaginal birth show 135 of their mother's 187 bacteria strains after birth, infants born via surgical delivery show only 55. Antibiotics given to GBS+ parents during birth also have an effect, since they wipe out good flora in the birth canal. Exactly how these interventions affect long-term health is not yet clear, but it is important that we continue to carefully consider the impact of birth interventions on the microbiome.

- What about special situations? Many of the mechanisms of microbiome transfer rely on birth and direct breastfeeding. What about parents who exclusively pump, rely on donor milk, or induce lactation for an adopted baby? Exclusive pumping and the use of donor milk both impact the microbiome to some extent. Pasteurization of donor milk inactivates some of the living organisms in human milk, and exclusive pumping does not allow for the two-way communication discussed earlier where baby's saliva is taken into the breast and informs lactocytes of the baby's specific infection exposure. However, as you address parents' concerns, what the science tells us now is that receiving human milk is more important than how it is the baby receives the milk.

Microbiome science is only a baby itself. Our understanding of the gut microbiome is just getting started! There is so much more to learn. However, the exciting news is: Understanding how the unique components of human milk interact with the infant's gut organisms is helping us begin to understand how those benefits occur—they operate through the microbiome.

References: https://learning.ilca.org/products/webinar-the-maternal-child-microbiome-an-overview-of-evidence-and-implications#tab-product_tab_overview

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