



Understanding the NEW NUTRIENTS IN MILK

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To help fill dietary gaps, some milk products for children recently have included such nutrients as omega-3 fatty acids (DHA), choline, and prebiotics (indigestible fiber). Your patients may ask you what functions they perform. Here's a primer on the latest literature:



WHY WHOLE MILK?

- Of all beverages, milk plays the most critical role for enriching a child's diet quality [1].
- Only milk, water, and 100% juices are recommended [2]. Water is important for hydration, but it is non-nutritive. 100% fruit juices should be limited to a single serving of 4-8 oz per day [3].
- Whole milk is ideal for nearly all young children to ensure sufficient fat for myelination of the rapidly expanding brain [4].
- The admonition to use low- or no-fat dairy is not supported by recent literature [5]. Saturated fats in dairy do not appear to contribute to cardiovascular disease, diabetes, metabolic syndrome or obesity [5,6] and they even may be protective [7].
- For growing children and adolescents, dairy milk is considered superior to plant-based alternatives to promote linear growth and support diet quality [1,8-11].
- Of the 4 nutrients of concern, cited by every U.S. Dietary Guideline's expert committee since 2005, fluid milk is the #1 source in the food supply for 3 of them – calcium, Vitamin D, and potassium [12].



WHY DHA?

- DHA (docosahexaenoic acid) is a long-chain fatty acid that — along with other omega-3 fatty acids — has many physiologic roles beside providing energy. DHA serves as a ligand for receptors, a precursor of lipid mediators, and in cell membranes its many double-bonds alter fluidity and enhance cell signaling [13].
- DHA acts to modulate inflammatory and immune responses.
- Clinical research on DHA spans 6 areas: heart disease, cancer, immune function, neuronal activity, aging, and "other" disorders (i.e., migraine headaches, malaria, and sperm fertility).
- DHA is critical for myelination of the frontal lobes throughout childhood. Several studies on children and adolescents support the effects of adequate DHA levels on behavior, memory, learning, and development of cortical "executive functions" [14-16]. Some studies suggest that many of us do not get as much DHA as some experts recommend.



WHY CHOLINE?

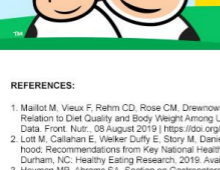
- Choline is important for maintaining the structure of all cell membranes, but importantly for children and adolescents, in brain choline works in association with DHA to safeguard neuronal function [17].
- Choline also serves as a building block for making acetylcholine, a vital neurotransmitter in the brain [18].
- Choline deficiency can result in cognitive decline, emphasizing its importance not only for normal brain structure but also for cognitive performance [18].
- Intakes of choline are low across the lifespan, particularly in pregnant women, children, and adolescents [19-20].



WHY FIBER (and Prebiotics)?

- Fiber is one of the 4 nutrients of concern, which are under-consumed by all age groups in the U.S. [21].
- Fiber and other non-digestible forms of carbohydrate (fibers) act as prebiotics to nourish a strong, stable intestinal bacterial flora that, in turn, helps to protect against pathogens, aids in digestion and recovery of organs, and generates by-products that signal the body's metabolic centers [22-24].

Every meal and snack matters for diet quality. Stay current on the types of nutrients being added to foods and beverages to understand how they may help your pediatric patients during their critical stages of growth and development.



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