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Setting the Stage for Lifelong Nutrition

The first five years of a child's life is a period of rapid physical, mental and physiological growth and development. Adequate nutrition during those first 1,000 days plays an important role in the overall health and well-being of a child throughout his or her development.

Children today face challenges related to their modern environments, such as increased prevalence of food allergies and obesity. At my house, food allergies top the list of challenges because my daughter is allergic to peanuts, tree nuts and pretty much all things that swim. However, avoidance of those foods puts her at risk of falling short on key nutrients such as protein, niacin and vitamins B6, B12, A and E. Luckily, there are alternatives such as meats, poultry, dairy, fruits and vegetables that boost those nutrient levels, but we also supplement her diet with a daily multivitamin, and protein bars and shakes.

Allergies and obesity are not the only dietary-related issues faced by young children today. Ensuring adequate intake of vital nutrients should be top of mind for all parents because nutrients not only benefit growth and development, but are also essential for specific functions including cognition, digestion and immunity.

Just last year, the American Medical Association (AMA) called for evidence-based amounts of choline to be included in prenatal vitamins. In January 2018, the American Academy of Pediatrics issued a policy statement that identified choline as one of several key "brain building" nutrients critical to early childhood development.

Vitamin K2 is another nutrient often missing from the diet in the first five years, and recent research has shown a high prevalence of vitamin K deficiency among infants and children. This should sound warning alarms since vitamin K is critical for healthy bone development and also supports healthy coagulation and cardiovascular health.

Nutritional supplements for children face an extra challenge of approval by parents, many of whom are health-conscious Millennials. What's more, Millennial parents account for 42 percent of all households with children, which means generational shifts are moving the children's market in a new direction.

This Digital Magazine examines the research behind nutrients that help children from birth to age 5, and describes how they help build a foundation of good health for a lifetime.

Cheers,

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2018

Nutrition for the First Five Years

by Lisa Schofield

INSIDER's Take

- Children today face challenges related to their modern environments, such as increased prevalence of food allergies and obesity.
- Adequate nutrition during the first 1,000 days of a child's life not only impacts development, but can impact heath throughout life.
- Nutritional supplements for children face an extra challenge of approval by parents, many of whom are health-conscious Millennials.

It is a memorable time for young parents—a child's first word, first step, that very first hand-clap in bubbly, innocent delight. A child's initial five years are hallmarked by numerous firsts; it is also a critical time of accelerated growth. Although all but eradicated now, such childhood diseases as scarlet fever, diphtheria, mumps and measles cut a wide and deadly swath among young children only a little more than a century ago in the Western world. Despite these advances, wee ones today still face certain challenges rooted in modern environments.

These challenges can come from more recent history. Nena Dockery, technical services manager, Stratum Nutrition, explained the health and nutritional challenges that impact infants and toddlers today are a continuation of those that began approximately 20 years ago.

A significant, widespread concern is food allergies. As food allergy cases in young children increased, pediatricians began recommending the avoidance of highly allergenic foods such as fish, peanuts (and other tree nuts) and dairy until after a child's first birthday, but more recent research suggests it is advantageous to introduce these foods in small amounts between 4 months and 6 months of age.[1]

Another challenge affecting young children is the growing trend toward obesity, leading to unprecedented cases of childhood type 2 diabetes. Dockery pointed to increased lack of physical activity and the prevalence of poor diet due to widespread availability of processed, sweetened and fatty foods as driving factors.

Allergies and obesity are not the only dietary-related issues faced by young children today, Dockery noted. "There has also been a steady increase in certain deficiency diseases resulting from alterations in dietary and lifestyle habits." For example, kids who avoid dairy foods and spend much time indoors are subject to low vitamin D levels, which can lead to numerous imbalances and susceptibilities. And avoiding dairy at young ages leads to potentially low levels of calcium, a nutrient much needed during a time of heightened bone development.

Another nutrient often missing from the diet in the first five years, one that has shown to be critical for healthy bone development, is vitamin K2 as menaquinone-7. According to Kate Quackenbush, communications director with NattoPharma USA Inc., vitamin K2

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also supports healthy coagulation and cardiovascular health through the inhibition of vascular calcification. Unfortunately, as with vitamin D, "research shows that there is a high prevalence of vitamin K deficiency among infants and children," she said.

Quackenbush additionally mentioned that lack of K2 consumed by the mother to transfer through breast milk is a crucial factor in the resulting K2 deficiency of the child. This is also the case with omega-3 essential fatty acids (EFAs), noted Gretchen Vannice, M.S., R.D., head of global nutrition education for AlaskOmega. "Because the current consumption of EPA [eicosapentaenoic acid] and DHA [docosahexaenoic acid] among pregnant women and young children are so low and the need is so great, the FDA and [Environmental Protection Agency] coordinated a joint advisory that pregnant women and young children consume two to three servings of fish every week," she said.

Infants and toddlers especially need regular supply of EPA and DHA omega-3s to ensure proper development of the brain, eyes, immune system and central nervous system. Vannice noted research has shown that children with attention deficits have lower levels of EPA and DHA compared to other children,[2] and when children consume EPA and DHA omega-3s, they exhibit improved focus and learning skills, social skills and less aggressive behavior.[3] Further, she added, preliminary research indicated better sleep quality.[4]

"The entire goal of the first 1,000 days of life is to optimize the nutrition of the child, which includes optimizing the nutrition of the mother from before conception through lactation."

—Paul Willis, CEO and president, Cypress Systems Inc.

Choline is another nutrient that is crucial during fetal development and infancy because of its significant role in brain development. Yet, Tom Druke, director of VitaCholine brand development, Balchem Human Nutrition and Pharma, said a large number of pregnant and nursing mothers are not consuming enough of it. He cited the Centers for Disease Control and Prevention's (CDC) "What We Eat in America, NHANES 2013-2014" research, which stated 90 percent of U.S. adults are not obtaining the recommended intake of choline.

A child's first 1,000 days have a significant influence on his or her health that can last a lifetime, advised Paul Willis, CEO and president, Cypress Systems Inc. He noted nutrition (or lack thereof) can impact normal physical and neurological development, reduce susceptibility to obesity, and lower risk of development of noncommunicable and infectious disease. "The entire goal of the first 1,000 days of life is to optimize the nutrition of the child, which includes optimizing the nutrition of the mother from before conception through lactation," Willis emphasized.

Ensuring a child obtains optimal levels of a wide spectrum of nutrients in infancy helps him or her to build stronger immune function, increasing resistance to common communicable infections. "Upper respiratory infections [URIs] are the most common acute illness affecting young children," Dockery said, "and this has resulted in the frequent overuse of antibiotics. As more young children enter daycare facilities, exposure to a wider group of bacteria and viruses is inevitable."

Filling the Gaps

Nutritional supplements for young people face an extra challenge: mom (and dad, too). Products need to pass a rigorous parental approval process. Today's young parents are the Millennials, who are the most anti-synthetic generation to date. And they expect that the science has been—and will continue to be—performed to show inarguable efficacy for their kids.

Barring genetic/hereditary concerns, parents tend to focus more on ensuring their infants and toddlers obtain enough of the basics (vitamins, minerals, probiotics and EFAs) to achieve a strong, healthy constitution, physically and mentally.

One concern many expectant parents overlook is the possibility of premature delivery. Pre-term births are associated with a variety of health issues, including: severe infections, respiratory dysfunction (e.g., acute and chronic lung disease), visual impairment, neurological disorders (including learning disabilities, such as attention deficit hyperactivity disorder [ADHD] and autism spectrum disorder [ASD]), and even increased mortality.[5]

Willis said selenium has shown to be beneficial for pre-term babies; a recent review of 18 clinical trials indicated selenium supplementation can reduce many of the clinical complications associated with premature births, such as bacterial infections.[6]

Also common in newborns is low vitamin K levels. According to Quackenbush, as many as half of all newborns are vitamin K-deficient. Often, this is caused by limited K transport across the placental barrier, as well as low vitamin K2 content in breast milk. Additionally, a vitamin K-deficient newborn may develop a bleeding disorder called vitamin K deficiency bleeding (VKDB). To prevent this life-threatening disorder, in 2003, the American Academy of Pediatrics recommended intramuscular vitamin K be given to all newborns.

Breast milk is relatively low in vitamin K compared to formula, Quackenbush noted, so newborns who are exclusively breast-fed may be at increased risk for vitamin K deficiency. "Earlier studies have demonstrated that vitamin K concentrations in human milk in general are relatively low at 2.5 mcg/L,"[7] she underscored. "Studies have also shown that breastfeeding mothers who supplemented with vitamin K showed significantly increased concentrations of the vitamin in their breast milk."[7,8]

Quackenbush maintained children with illnesses such as cystic fibrosis, liver disease and inflammatory bowel disease (IBD) typically have low levels of K. But some studies have shown that many healthy children do, too. In a cross-sectional study, markers for vitamin K status in healthy boys and girls (ages 3 to 18) were compared with those of 30 adults.[9] Results showed children had a statistically significant elevation of the ratio of inactive-to-active osteocalcin, indicative of a poor vitamin K status. This increase was approximately three to six times higher in children than adults. Also, researchers revealed a correlation between the bone markers for bone metabolism and inactive and active ostecalcin in the children's group. These results showed a pronounced low vitamin K status of bone during growth.

Another study showed 45 mcg/d of vitamin K2 menaquinone-7 (as MenaQ7®, from NattoPharma) increased circulating concentrations of K2 and increased osteocalcin carboxylation (needed for bone health) in healthy, prepubertal children.[10]

Underlining the importance of a mother's nutritional intake during pregnancy is a recent clinical study showing a correlation between increased choline intake during pregnancy and improved information processing speed in infants.[11]

In 2017, the American Medical Association (AMA) called for evidence-based amounts of choline to be included in prenatal vitamins. "This is important because a recent review identified only eight of the top 25 prenatal vitamins as containing choline, and none of them provided enough," Druke reported. Those containing choline had just 12 percent of the Dietary Reference Intake (DRI) for pregnant women at 55 mg/d, when the daily intake should be 450 mg.[12] The alarms sounded because research has shown choline is associated with a reduction in neural tube defects[13] and plays a significant role in brain development. The American Academy of Pediatrics reiterated this point in January 2018, when it issued a policy statement identifying choline as one of several key "brain building" nutrients critical to early childhood development.[14]

Underlining the **importance** of a **mother's nutritional intake** during pregnancy is a recent clinical study showing a correlation between **increased choline intake during pregnancy** and improved information processing speed in infants.

"For the first few months following birth," Druke added, "brain development continues at a rapid pace, making choline a critical building block during infancy." Newborns' choline levels at birth and in the first few weeks after are several times higher than choline levels found in a typical adult, which is likely due to meeting the needs of rapid growth during this period. Choline continues to play an essential role in the health of toddlers and older children; it serves as a precursor to the essential neurotransmitter acetylcholine.

Resistance to common childhood maladies can also be improved with supplementation, such as probiotics. Placebo-controlled studies of Stratum Nutrition's BLIS K12™ in children showed potential benefits in decreasing

the incidence of pharyngotonsillitis and otitis media,[15] bacterial and viral infections,[16] acute otitis media (AOM),[17] and streptococcal pharyngitis and AOM.[18]

The Feeding Infants and Toddlers Study (FITS), sponsored by Nestlé Nutrition, is one of the largest U.S. surveys to investigate the eating patterns, nutritional intake and lifestyles of 3,273 infants and toddlers from birth to age 4. The study found only 30 percent of preschoolers met the recommendation for five daily servings of fruits and vegetables. The results showed parents need more education and help when it comes to healthy feeding of their babies and toddlers.

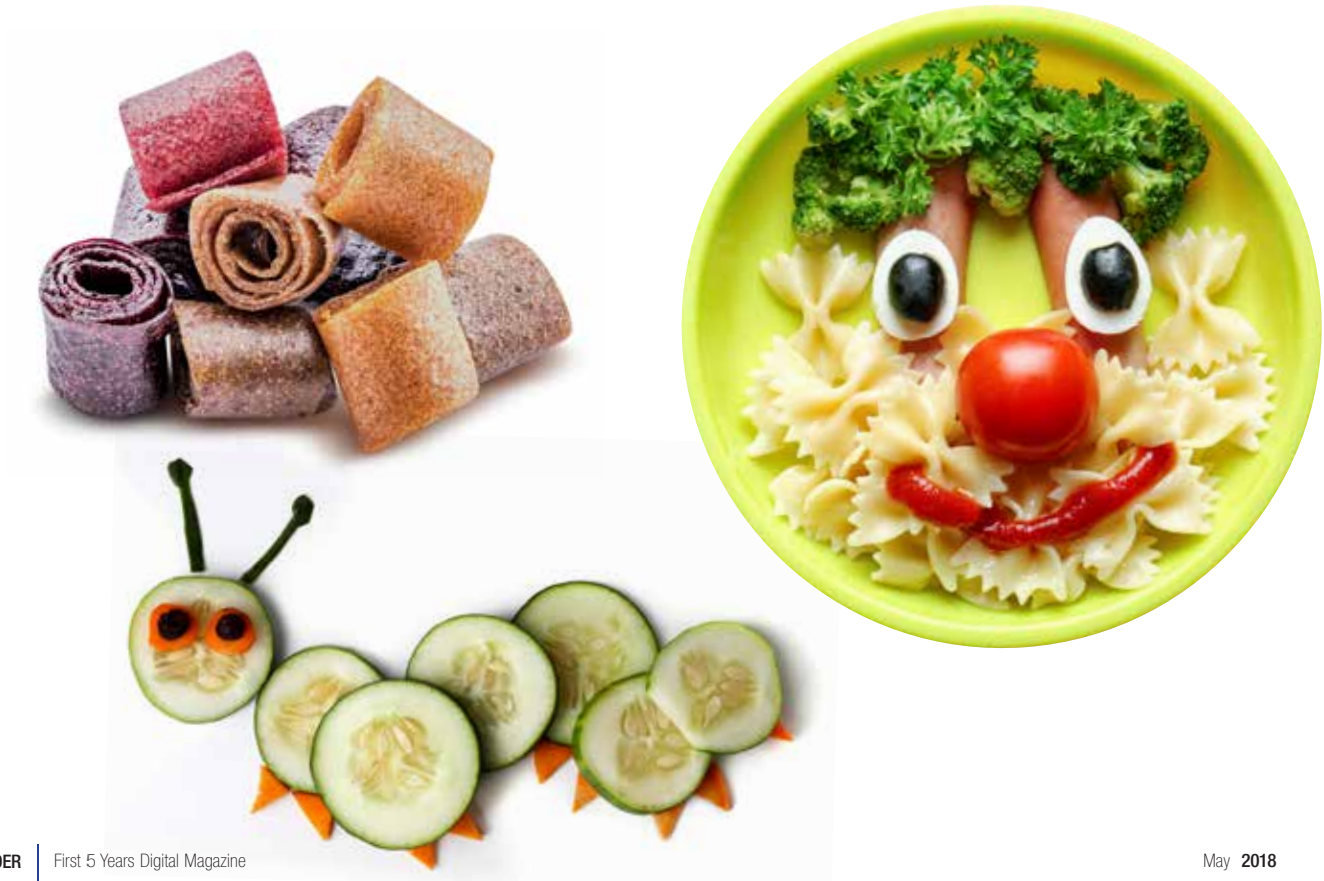
And this is squarely where properly formulated supplementation shines for busy, harried parents. "Ever-increasing demands on time and 'mental bandwidth' make it harder to ensure that we are getting the best nutrition for ourselves and for our families," Druke observed. "Brands that understand this and strive to develop quality supplements and fortified foods and beverages based on both science and consumer insights will have the greatest success."

Lisa Schofield is a writer, editor and trade editorial relations specialist based in New Jersey. She has been in the dietary supplement industry since 1995. She can be reached at wordesigns@optonline.net.

References:

1. Fleischer DM et al. "Primary Prevention of Allergic Disease Through Nutritional Interventions." *J Allergy Clin Immunol: In Practice*. 2013;1:29-36.
2. Stevens L et al. "Essential fatty acid metabolism in boys with attention-deficit hyperactivity disorder." *Am J Clin Nutr.* 1995;62:761-8.
3. Richardson A, Montgomery P. "The Oxford-Durham Study: A Randomized, Controlled Trial of Dietary Supplementation With Fatty Acids in Children With Developmental Coordination Disorder." *Pediatrics*. 2005;115;1360-66.
4. Montgomery P et al. "Low Blood Long Chain Omega-3 Fatty Acids in UK Children Are Associated with Poor Cognitive Performance and Behavior: A Cross-Sectional Analysis from the DOLAB Study." *PLoS ONE*. 2013;8(6):e66697.
5. Hodek JM, von der Schulenburg JM, Mittendorf T. "Measuring economic consequences of preterm birth – methodological recommendations for the evaluation of personal burden on children and their caregivers." *Health Economics*. 2011;1:6.
6. Germano R et al. "Selenium deficiency and the effects of supplementation on preterm infants." *Rev Paul Pediatr.* 2014;32:126-35.

7. Greer FR. "Are breast-fed infants vitamin K deficient?" *AdvExp Med Biol.* 2001;501:391-5.
8. "Food and Nutrition Board, Institute of Medicine. Vitamin K. Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium, and Zinc." *Washington, D.C. National Academy Press.* 2001:162-196.
9. vanSummeren M et al. "Pronounced Elevation of Undercarboxylated Osteocalcin in Healthy Children." *Pediatric Research.* 2007;61:366–370.
10. vanSummeren MJ et al. "The effect of menaquinone-7 (vitamin K2) supplementation on osteocalcin carboxylation in healthy prepubertal children." *Br J Nutr.* 2009 Oct;102(8):1171-8.
11. Caudill MA et al. "Maternal Choline supplementation during third trimester of pregnancy improves infant information processing speed: a randomized, double-blind, controlled feeding study." *FASEB J.* 2017;32(4):fj.201700692RR.
12. Bell CC, Aujla J. "Prenatal Vitamins Deficient in Recommended Choline Intake for Pregnant Women." *J Fam Med Dis Prev.* 2016;2(6):048.
13. Shaw GM et al. "Choline and Risk of Neural Tube Defects in a Folate-fortified Population." *Epidemiology.* 2009;20(5):714-719.
14. American Academy of Pediatrics. "Food For Thought: AAP Aims to Ensure Kids Get Key Nutrients for Brain Development." January 2018.
15. Di Pierro F et al. "Preliminary pediatric clinical evaluation of the oral probiotic Streptococcus salivarius K12 in preventing recurrent pharyngitis and/or tonsillitis caused by Streptococcus pyogenes and recurrent acute otitis media." *Int J Gen Med.* 2012;5:991-997.
16. Di Pierro F et al. "Use of Streptococcus salivarius K12 in the prevention of streptococcal and viral pharyngotonsillitis in children." *Drug, Healthc Patient Saf.* 2014;6:15-20.
17. Di Pierro F et al. "Oral use of Streptococcus salivarius K12 in children with secretory otitis media: preliminary results of a pilot, uncontrolled study." *Int J Gen Med.* 2015;8:303-308.
18. Di Pierro F et al. "Effect of administration of Streptococcus salivarius K12 on the occurrence of streptococcal pharyngo-tonsillitis, scarlet fever, and acute otitis media in 3 years old children." *Eur Rev Med Pharmacol Sci.* 2016;20:4601-4606.



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Takeaways: The First 5 Years

The first five years of a child's life is a period of rapid physical, mental and physiological growth and development. Adequate nutrition during those first 1,000 days plays an important role in the overall health and well-being of a child throughout his or her development. Whether a brand is an established player in the children's nutrition category or looking to enter the game, it should consider these market dynamics:

Children's nutrition needs. Nutrition can impact normal physical and neurological development, reduce susceptibility to obesity, and lower the risk of developing noncommunicable and infectious disease. Critical nutrients to ensure adequate development for infants, toddlers and young children include selenium, choline, vitamin K2 and omega-3 eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), among others. Infants and toddlers especially need a regular supply of EPA and DHA omega-3s to ensure proper development of the brain, eyes, immune system and central nervous system. Choline is another crucial nutrient during fetal development and infancy because of its significant role in brain development.

Identify whitespace. Health and nutritional challenges impacting infants and toddlers didn't happen overnight. Over the past 20 years, childhood obesity rates have ballooned to alarming proportions, setting the stage for an increased number of cases of childhood type 2 diabetes. Increased diagnoses of food allergies also are adversely affecting children's health, resulting in insufficient intake of key nutrients. For example, kids who have dairy allergies or intolerances may not be getting enough calcium to aid in bone development. Research also has shown a high prevalence of vitamin K deficiency among infants and children, which could adversely affect healthy bone development and heart health. Brands have the opportunity to formulate and market efficacious supplements that directly address these deficiencies.

Appeal to parents. Nutritional supplements for children face an extra challenge of approval by parents, many of whom are health-conscious Millennials. Products need to pass a rigorous parental approval process, as today's young parents are the most anti-synthetic generation to date. And they expect that the science has been—and will continue to be—performed to show inarguable efficacy for their kids. Brands should be mindful that Millennial parents account for 42 percent of all households with children, which means generational shifts are moving the children's market in a new direction.

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