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Supplements: Nutrition Insurance For Children

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In today's era of soil depletion and processed foods, parents are wise to look into a nutritional protection plan for their kids—perhaps one that consists of a high-quality food-based supplement.

In an ideal world, our children would get enough nutrients from the food they eat. Of course, as dietitians, we know that is not always the case. Theoretically, a balanced diet would give our children all of the necessary vitamins and minerals. But many of the foods families eat are processed and have very few nutrients. As food and nutrition professionals, we know that the nutrients we require should come through our food supply; yet cooking, storage practices, our toxic environment, and soils depleted of essential nutrients cause food to be stripped of its natural nutritional content.

In addition to this, the sad reality for numerous children is that they prefer processed food. As a result, even if local and organic whole food is purchased, it's practically impossible to get adequate amounts of vitamins and minerals from food alone, and our children will not always eat these food choices.

Don Colbert, MD, author of *The Seven Pillars of Health*, believes that supplements are essential for maintaining good child health. On the premise that our children do need supplements, he recommends whole food-based nutrients that combine enzymes, vitamins, antioxidants, phytochemicals, and minerals to work together synergistically.

Wendy Howard, RD, LD, pediatric nutrition specialist, agrees and recommends only whole food supplementation to the patients she counsels at her private nutrition practice in Texas. "The advantage of whole food nutrients compared with isolated, fragmented nutrients opens up a whole new perspective on supplementation," says Howard. She shares the prevention message with her clients by educating them on the difference between a vitamin/mineral pill, which may contain 10 or 20 isolated nutrients, and a whole food supplement containing real food nutrients such as fruits, vegetables, and grains, which will provide tens of thousands of phytochemicals. Colbert points out that if children are eating a healthy diet, they should be getting at least 50% of their daily vitamins and minerals from the foods they eat. "Remember: Supplements are just that and should be in addition to the nutrients obtained from a healthy diet," he says.

Natural vs. Synthetic Supplements

What is the best form of supplementation? Is the bioavailability of whole food vitamins better than synthetic vitamins? In *The Real Truth About Vitamins and Antioxidants*, author Judith De Cava promotes the choice of natural food concentrates when using supplements. She says this does not necessarily mean that synthetic vitamins are useless. "Natural food concentrates have a much lower 'potency' in milligrams or micrograms, which leads many consumers to believe that they are less effective and not as powerful as synthetic vitamins," DeCava says. "Yet food concentrates cause potent nutritional reactions as they are working synergistically in the body."

De Cava also points out in her book that a minute amount of a vitamin left intact in its whole food form is tremendously more functional, powerful, and effective nutritionally than a large amount of a chemically pure vitamin fraction. She concludes that only small amounts of natural vitamin complexes and organic micronutrients are required to accomplish many “big biochemical jobs.”

Backing up De Cava’s research are two separate studies on the body’s actual micronutrient absorption of dried, encapsulated fruit and vegetable preparations and how effectively the body is able to use the nutrients. Study results showed increased plasma levels of select antioxidants with positive micronutrient absorption by the body.¹ Research findings also indicated the bioavailability of phytochemicals from the food-based supplements.²

When to Start Giving a Multivitamin

William Sears, MD, who has practiced pediatric medicine for more than 30 years, believes children need more vitamins, minerals, and other nutrients per pound of body weight than adults. He feels that because of their erratic eating patterns and lack of wholesome food consumption, children are more likely to have nutrient deficiencies. Sears advises parents on his Web site—www.askdrsears.com—to consider the child’s age and stage before administering supplements. He has found that the best time to start giving a supplement is when the child enters an erratic eating stage—usually in the toddler or preschool years. To be on the safe side, he recommends parents start their children on a supplement between the ages of 1 and 2, since they are more prone to nutrient deficiencies and tend to be picky eaters during this stage.

However, Sears advocates feeding children healthy food rather than giving them pills, as he believes it is best to get vitamins and minerals through food due to nutrient synergy. “Make sure the multivitamin you choose contains the ‘big six’: omega-3 fats, calcium, iron, zinc, vitamin C, and vitamin E. These are the nutrients most often deficient in children,” he says. Sears asks parents to consider giving their child supplemental omega-3s. He has seen that the most common nutrient deficiency in growing children is omega-3 fats, noting that most over-the-counter multivitamin/mineral preparations don’t contain them.

Supplement Use by Children

The American Academy of Pediatrics (AAP) states that “a diet based on the Food Guide Pyramid provides adequate amounts of all the vitamins a child needs.” Although advocating a healthy diet first and foremost, the AAP does feel there are situations where vitamins are necessary, especially if the child is a very picky eater or has a poor diet. The AAP acknowledges that a daily dose of children’s vitamins recommended by a pediatrician could be helpful and add to the many fortified foods now available.

According to the AAP, 20% of children do not get enough vitamin D. Based on this finding, the AAP has started recommending vitamin D supplementation for infants and children. Because breast milk is a poor source of vitamin D, exclusively breast-fed babies should receive 200 to 400 international units of vitamin D daily as recommended by a pediatrician. Older children who don’t drink at least 17 ounces of vitamin D-fortified milk also need supplements if they don’t get regular sunlight exposure.

New research on supplement use by children surprised researchers at the National Institutes of Health with results showing that only 32% of American children take dietary supplements.³ The study, as reported in the *Archives of Pediatrics & Adolescent Medicine*, was based on a national survey conducted from 1999 to 2002 that included 10,136 children aged 18 or younger. The most commonly used supplements were multivitamins and multimineral, which were taken by 18% of the children. Only 4% used single-vitamin supplements and 2% used single-mineral supplements, with less than 1% using botanical supplements.

Mary Frances Picciano, PhD, who led the study, says the researchers anticipated that supplement usage would be higher among children than adults, but the opposite was true. The research also revealed that children using supplements were more likely to be thinner; to be from a higher-income, nonsmoking family; and to spend less time watching television and playing video games. The study found that non-Hispanic white children were nearly twice as likely as black children to take supplements. When it came to age groups, the most likely to be taking a dietary supplement were those aged 4 to 8, followed by 1 to 3, 9 to 13, 14 to 18, and infants younger than the age of 1.

A study in the *Journal of Orthomolecular Medicine* showed how vitamin C supplementation helped to protect children from heavy metal absorption and improve behaviors.⁴ Erik Paterson, MD, has seen a dramatic increase in behavioral problems, learning disabilities, attention-deficit/hyperactivity disorder, and autism among children. He notes that the number of children receiving special education services continues to rise. Growing evidence suggests that heavy metal pollution is a contributing factor, and vitamin C supplementation may be part of the solution. Paterson, with experience as a consulting physician at a center for the mentally challenged, researched high blood lead levels responding to equally high doses of vitamin C administered (up to 4,000 milligrams per day). After following lead levels over a two-year period, Paterson saw lead levels drop and become practically undetectable with marked behavior improvement in the patient.

University of Victoria professor Harold D. Foster, PhD, believes that in addition to vitamin C, selenium may also protect children by helping to eliminate heavy metals from their bodies. Based on the study's results, Foster recommends children take a vitamin C supplement with each meal, along with a multivitamin containing selenium.⁵

Confirming that supplement use does make a difference in children's behaviors, the Children's Health Study conducted questionnaire surveys with more than 25,000 children aged 6 to 15 to determine what effect adding food-based supplements to the family diet can have on children's health. The study measured behaviors such as how many days of school children missed and how many times they visited the doctor. Parents reported that after four to eight months of their children taking the supplement, 46% of the children had been to the doctor less often, 39% reported missing less school, 41% were taking less over-the-counter medication and/or prescription drugs, 58% were drinking more water, 61% were consuming less soft drinks or fast food, and 43% were eating more fruits and vegetables.

Hints for Compliance

Once they understand that supplements can greatly enhance their children's diets, parents need guidance on how to get their children to be consistent with taking vitamins. It is unreasonable to expect a small child to swallow a tablet or piece of a tablet. Instead, parents need to choose a food or drink that hides the vitamin taste, crush the tablet to powder form, and mix it into a favorite juice or soft food. "Applesauce or sugar-free jelly works well when mixing the crushed tablet or powder," says Mary Ann Colegrove, an Ohio-based RD and mother of two young boys. She reports that the above method has worked well with her sons, who take their supplements faithfully.

Liquid vitamin preparations do not keep well after opening and quickly lose their potency, even in the refrigerator. Vitamin tablets or capsules should not be kept in a refrigerator. The package may say store in a cool, dry place, but the refrigerator is a cold, wet place. Moisture generally reduces supplement potency. Keep bottles out of the sun and off the stove. Once children are old enough to handle chewable tablets, parents should consider chewable supplements, which are tasty and convenient. However, beware of artificial colors, flavors, and sweeteners in the ingredient list. The best way to administer supplements to a child is to establish an enjoyable routine at home on a consistent basis. If supplements can't be given at home, most schools require a letter from a doctor giving a child permission to take them at school.

Parents continue to be bombarded with complicated health choices for their children. As dietitians, we can help parents sort through the many brands of “cookie-cutter” children’s vitamins. Mary Beth McCue, RD, LDN, CDN, an integrative nutrition consultant from upstate New York, specializes in developing individualized nutrition programs involving supplementation. She promotes whole food supplementation for children because she believes the body is able to utilize the nutrients more effectively. “Since children require a comprehensive mix of nutrients during phases of growth and development, they are establishing a healthy foundation in their bodies, which will set the stage for a lifetime of health,” says McCue. “Children face more challenges today in the lifestyle areas of increasing stress, maintaining healthy immune systems, and eating a diet of whole, sustainable foods.”

Dietitians have an opportunity to invest in the future of wellness by educating parents and children about the best food-based supplements available. Let’s follow Howard and McCue’s lead and recommend the use of high-quality whole food and/or phytonutrient supplements for children. Unfortunately, much of the vitamin industry is still a business filled with fraud and confusion for the consumer. As the nutrition experts, we can help parents by recommending the best-quality, synergistic mix of nutrient compounds for their children. In other words, we can provide “nutrition insurance” for the next generation.

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Chart: [Natural vs. Synthetic Supplements](#)

How to Tell if a Supplement Is Natural or Synthetic

| | Natural | Synthetic |
|---------------------------------|------------------------------|---|
| Vitamin A | Fish oils | Acetate or palmitate |
| Vitamin B ₁ | Yeast | Thiamine mononitrate |
| | Rice bran | Thiamine hydrochloride |
| | | Thiamine chloride |
| Vitamin B ₂ | Yeast | Riboflavin |
| | Rice bran | |
| Vitamin B ₃ (Niacin) | Yeast | If source is not given, it’s synthetic. |
| | Rice bran | |
| Vitamin B ₆ | Yeast | Pyridoxine hydrochloride |
| | Rice bran | |
| Vitamin B ₁₂ | Yeast, liver | Cobalamin or cyanocobalamin |
| | Fermentation | |
| | Concentrate | |
| Vitamin C | Citrus fruits, green peppers | Ascorbic acid |
| | Rose hips, acerola | |
| | Wildberry | |
| Vitamin D | Cod or other fish oils | Irradiated ergosterol or calciferol |
| Vitamin E | d-alpha tocopherol | dl-alpha tocopherol |
| | Vegetable oils | |
| | Wheat germ | |

| | | |
|-----------|-------------------|-----------|
| | Mixed tocopherols | |
| Vitamin K | Alfalfa | Menadione |

— Source: Holistic Pediatric Association (www.hpakids.org)

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