



90 Years of Caring for Children—1930–2020

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August 13, 2020

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RE: 2020 Dietary Guidelines Advisory Committee; Docket FNS-2019-0001

To Whom It May Concern:

On behalf of the American Academy of Pediatrics (AAP), a non-profit professional organization of 67,000 primary care pediatricians, pediatric medical sub-specialists, and pediatric surgical specialists dedicated to the health, safety, and well-being of infants, children, adolescents, and young adults, I write to provide comments in response to the Dietary Guidelines Advisory Committee (DGAC)'s Scientific Report.

The Dietary Guidelines for Americans (DGA) play a crucial role in the lives of millions of children. Pediatricians routinely look to the dietary guidelines to provide advice to our patients, and we do so with confidence that the best scientific evidence available was used to inform the recommendations. The DGA also underpin key federal nutrition programs like the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) and the school meals program. Before accounting for the impact of the SARS-CoV-2 (COVID-19) epidemic, 21 percent of our children live in poverty and 1 in 3 children struggle with overweight or obesity. Due to COVID-19, millions more families cannot afford to feed their children each day and the loss of access to nutritious foods and physical activity in schools may have longer term effects on child health and well-being. As such, the dietary guidelines come at an important time as they can aid families in tackling the double burden of food insecurity and obesity by influencing healthier eating in school and at home.

The AAP strongly supports the inclusion of evidence-based dietary guidelines for children birth to 24 months in the 2020 DGA, as required by the 2014 Farm Bill. Maternal prenatal nutrition and the child's nutrition in the first 2 years of life (1,000 days) are crucial factors in a child's neurodevelopment and lifelong mental health. Child and adult health risks, including obesity, hypertension, and diabetes, may be programmed by nutritional status during this period.¹ Dietary guidelines for this age group will be a crucial resource for pediatricians, parents, and caregivers. Further, they will help to inform public policies to ensure that all children have an early foundation for optimal neurodevelopment, a key factor in long-term health.

We thank the members of the DGAC for thoroughly reviewing the evidence as it pertains to children. The DGAC reviewed an overwhelming amount of data and their work is instrumental in ensuring that parents and children have access to evidence-based recommendations regarding nutrition for children from birth to adulthood. As carefully as the DGAC reviewed the evidence, the lack of sufficient evidence in children, particularly in the first 2 years of life, and especially including racially and ethnically diverse children unfortunately limits the conclusions of the Scientific Report. This is to the detriment of the nation's children. We strongly urge the federal government, including the National Institutes of Health, to robustly

increase its investment in early nutrition research and to prioritize the inclusion of racially and ethnically diverse children.

The following comments provide recommendations for those tasked with finalizing the DGA at the Department of Health and Human Services (HHS) and Department of Agriculture (USDA). As recommended by the National Academies of Science, Engineering and Medicine, we urge the Departments to “provide the public with a clear explanation when the DGA omit or accept only parts of conclusions from the scientific report.”

Diet and Health Relationships: Pregnancy and Lactation

AAP thanks the Pregnancy and Lactation Subcommittee for thoroughly reviewing the available evidence and highlighting what is known, as well as not known, and what relationships exist and do not exist related to pregnancy and lactation. The AAP agrees with the importance of maternal dietary patterns which include diets higher in vegetables, fruits, whole grains, nuts, legumes, and fish, and lower in red and processed meats to help reduce risk of gestational diabetes and hypertensive disorders of pregnancy, both conditions which can lead to poor neonatal outcomes. In addition, these same dietary patterns were associated with decreases in preterm birth, which is a top cause of infant mortality and a key concern of the AAP.

Except for some findings of changes in fat content and composition in human milk related to maternal fat intake, there was no evidence of differences in human milk protein, vitamins, oligosaccharides, or milk quantity based upon dietary patterns. The AAP agrees that these findings will help mothers continue to eat a healthy balanced diet, without worrying about food that she must eat or must avoid while nursing in order to know that her milk is “just right” for her baby.

Regarding micronutrient supplementation, the AAP agrees with the importance of folate supplementation before and during pregnancy which was found to be associated with folate status of the mother, and a decrease risk of hypertensive disorders during pregnancy among some women. It is important for mothers to recognize that Omega 3 supplementation during pregnancy may be associated with favorable cognitive outcomes in children, but not necessarily so when used during lactation.

Duration, Frequency, and Volume of Exclusive Human Milk and/or Infant Formula Feeding

Human Milk

AAP strongly supports the recommendation of the DGAC to encourage exclusive breastfeeding, ideally for the first 6 months of life, with continued breastfeeding through the first year of life or longer as desired by the mother and infant. This recommendation is in line with AAP’s recommendation of exclusive breastfeeding for about 6 months, followed by continued breastfeeding as complementary foods are introduced, with continuation of breastfeeding for 1 year or longer as mutually desired by mother and infant.ⁱⁱ

AAP is also supportive of the DGAC recommendation to encourage the broader implementation of policies and programs that promote, protect, and support breastfeeding to benefit both the health of the mother and the infant. One program that is positively associated with breastfeeding is WIC. WIC supports breastfeeding mothers by providing: (1) information and support through counseling and educational materials; (2) a greater quantity and variety of foods for breastfeeding mothers than for mothers who formula feed their infants; (3) eligibility to participate in WIC longer than non-breastfeeding mothers—up to one year postpartum; (4) mother-to-mother support through WIC breastfeeding peer counselors; and (5) breast pumps and other aids that are necessary to help support the initiation and continuation of breastfeeding.ⁱⁱⁱ Access to WIC and its

Breastfeeding Peer Counseling Program should be increased and these programs should be adequately funded to meet the needs of all mothers no matter where they live.

Mother/baby friendly worksites are shown to reduce company health care costs, lower employee absenteeism, reduce employee turnover, and increase employee morale and productivity. The return on investment has been calculated that for every \$1 invested in creating and supporting a lactation support program (including a designated pump site that guarantees privacy, availability of refrigeration and a hand-washing facility, and appropriate mother break time) there is a \$2 to \$3 dollar return.^{iv} The Patient Protection and Affordable Care Act passed by Congress in March 2010 mandates that employers provide “reasonable break time” for nursing mothers and private non-bathroom areas to express breast milk during their workday.^v The establishment of these initiatives as the standard workplace environment will support mothers in their goal of supplying only breast milk to their infants beyond the immediate postpartum period.^{vi} AAP is also supportive of paid family leave, which is shown to increase duration of breastfeeding.

Formula Preparation

The Scientific Report did not address water sources used to mix powdered formula. Safe, potable water should be used to prepare infant formula.^{vii} Drinking water for approximately one sixth of US households is obtained from private wells.^{viii} These wells can become contaminated by pollutant chemicals or pathogenic organisms and cause illness. The presence of nitrates is particularly problematic for infants. If the water comes from a well, parents should ask whether the well has been regularly and recently tested for nitrate and coliforms and what the results were. A new infant or a child younger than 1 year in the home should prompt testing if the yearly test has indicated any fluctuation in nitrate concentrations or has never been performed. If recent results are not available, infant formula may be mixed with bottled water until the well is shown not to have excessive nitrate concentrations. Even a breastfed infant may consume water at some time, and boiling does not remove, and can concentrate, nitrate.

Foods and Beverages Consumed During Infancy and Toddlerhood and Food Patterns for Children Under 2

Complementary Feeding

AAP supports the DGAC’s recommendation that complementary foods and beverages should not be introduced to infants before 4 months of age, and ideally around 6 months of age. AAP recommends introduction of complementary foods at approximately 6 months of age.^{ix} The introduction of complementary foods before 4 months of age may increase the risk of obesity in later childhood.^x We concur with the DGAC that nutrient-dense complementary foods and beverages from all food groups, including meats, eggs, fish, fruits, vegetables, dairy, and whole grains, should be introduced in the second six months of life “to provide key nutrients, foster acceptance of a variety of nutritious foods, and build healthy dietary habits.” While the DGAC noted that evidence supports the need to provide complementary foods and beverages that contain adequate amounts of polyunsaturated fatty acids, specific guidelines regarding the optimal amount of docosahexaenoic acid (DHA) and arachidonic acid (ARA) in the final DGA would be helpful.

AAP strongly supports the DGAC’s suggestion that the message “every bite counts” relays the importance of carefully choosing complementary foods and beverages. AAP encourages federal agencies to develop communication and dissemination strategies to make this message clear and consistent to the public. Along with the “every bite counts” tag line, materials should emphasize the nutrients of concern for potential inadequacy and excess and make clear the importance of choosing nutrient-dense foods and avoiding low nutrition/high calorie “junk foods”. The 2020-2025 DGA should make this message clear and prominent.

Introduction of Allergens

The recommendations of the DGAC regarding introduction of peanut and egg products are confusing and should be clarified in the DGA. In Chapter 5, the Committee states “the evidence indicates that introducing peanut and egg in the first year of life (after age 4 months) may reduce the risk of food allergy to peanuts and eggs.” In Chapter 7, the Committee recommends introduction of peanut and egg products between ages 6 and 12 months. The discrepancy between the findings related to introduction after 4 months and the recommendation of introduction between 6 and 12 months is unclear.

Since the publication of the Learning Early About Peanut Allergy (LEAP) and Enquiring About Tolerance (EAT) trials, there have been revised recommendations from a number of organizations, including the AAP, regarding the early nutritional interventions for the prevention of atopic disease, specifically regarding food allergies. In general, these organizations have acknowledged that there is no need to delay the introduction of allergenic foods beyond 6 months of age and that they should not be introduced before 4 months of age.^{xi} In a 2008 clinical report, the AAP concluded that there was no convincing evidence of benefit for delaying the introduction allergenic foods beyond 4 to 6 months for the prevention of atopic disease, including peanuts, eggs, and fish. This conclusion has not changed since 2008.^{xii} Additionally, there is now strong evidence from a randomized trial that purposeful early introduction of peanuts may prevent peanut allergies in high-risk infants, resulting in the recommendation to introduce peanut protein as early as between 4 and 6 months.^{xiii} The data supporting a beneficial effect of early introduction of eggs is less clear.

AAP has also endorsed guidelines from the National Institute of Allergy and Infectious Diseases (NIAID) recommending a 3-pronged approach, specifically for the introduction of infant-safe forms of peanuts to infants, on the basis of the level of risk for peanut allergy and the results of the LEAP trial.^{xiv} The guidelines recommend adding infant-safe forms of peanut to the diet for most babies, as early as around 6 months, after other solid foods are tolerated.^{xv} For high-risk infants who have severe eczema requiring prescription treatments or have an egg allergy, testing for peanut allergy and introduction of peanut-containing foods under supervision of a health care provider is a consideration.^{xvi} These high-risk infants may have peanut products introduced as early as 4-6 month of age.^{xvii}

Given the various recommendations cited above, AAP urges USDA and HHS to reword the recommendation of the DGAC to align with the recommendations of AAP and NIAID and to suggest introduction of allergens for high risk infants as early as between 4 and 6 months of age. For other infants, a recommendation of introduction around 6 months is appropriate. This clarification will serve to clear up confusion that exists regarding the DGAC’s recommendation.

Iron-Fortified Infant Cereal

Though the Committee recommends that infants fed human milk at ages 6 to 12 months receive iron-fortified infant cereals or similar products to ensure adequate iron intake, AAP suggests that this recommendation be broadened to formula-fed infants as well. While formula is highly iron-fortified, many children nearing one year of age are often fed other non-fortified beverages. AAP policy states “for formula-fed infants, the iron needs for the first 12 months of life can be met by a standard infant formula (iron content: 10–12 mg/L) and the introduction of iron-containing complementary foods after 4 to 6 months of age, including iron-fortified cereals.”^{xviii} We urge USDA and HHS to recommend that all infants 6 to 12 months receive iron-fortified foods to ensure adequate iron intake.

Given the evidence of inorganic arsenic in rice-based products and the risks of cumulative long-term exposure, USDA and HHS should consider mentioning a “variety” of iron-fortified infant cereals in their

recommendations regarding iron-fortified infants cereals. AAP recommends feeding children a variety of grains to decrease the amount of arsenic in their diet.^{xi} To decrease exposure to arsenic from rice, the FDA recommends parents also serve infants iron-fortified cereals made of oat, barley or multigrain, which aligns with AAP guidance.^x Toddlers should be provided with a well-balanced diet that also includes a variety of grains.

Added Sugars

AAP supports the DGAC's conclusions regarding added sugars but would like to see USDA and HHS strengthen the wording of the DGAC's recommendations concerning added sugars in the first two years of life. Instead of saying to "avoid" or "limit consumption" of added sugars, the DGA should strongly state that added sugars should not be given to children under 2.

Similarly, AAP strongly supports the DGAC's conclusion that sugar sweetened beverages (SSB) should not be consumed by children younger than 2 years of age. AAP supported the consensus statement *Healthy Beverage Consumption in Early Childhood* that stated that SSB are not recommended for ages 0-5.^{xi} AAP urges USDA and HHS to reword the recommendation of the DGAC from "children under 2 should avoid consumption of SSB" to more strongly indicate that SSB should not be given to children under 2. Advice regarding consumption of SSB should also comment on reducing the risk of dental caries. Dietary sugar consumption is the main driver of dental caries.^{xxii}

Juice

While the DGAC Scientific Report did not make clear recommendations regarding consumption of 100% fruit juice for children under 2, we urge USDA and HHS to include such recommendations in the 2020-2025 DGA. AAP recommends that no juice should be offered before 6 months of age, and it is best to avoid juice completely until the infant is at least 12 months of age.^{xxiii} After 1 year of age, 100% fruit juice may be served as part of a meal or snack, but total daily volume should not exceed 4oz per day for children under 3 years of age. Juice drinks, which typically contain added sweeteners, should be discouraged.^{xxiv} This recommendation should be included in the 2020-2025 DGA.

Dairy Products

Because it is not explicitly stated in the DGAC report, we urge USDA and HHS to clearly state in the 2020-2025 DGA that cow's milk should not be given to children under 12 months of age. The composition of cow's milk does not match the nutritional requirements of infants, and its early introduction can increase blood loss from the gastrointestinal tract and contribute to iron-deficiency anemia.^{xxv} Avoidance of cow's milk until 1 year of age reduces the risk of inadequate intakes of nutrients such as iron, zinc, vitamin E, essential fatty acids, and long-chain polyunsaturated fatty acids and prevents excessive intakes of protein and electrolytes.^{xxvi}

Liquids, so-called "milks", based on plant foods (e.g., soy, rice, almond, or hemp) should not be used as a human milk or infant formula substitute. The caloric density of these products is typically lower than that of human milk or infant formula; protein quality is low and the protein quantity is very low for most such beverages; products are not fortified with micronutrients to levels recommended for infants and young children; and some contain high levels of phytate, which bind iron, zinc, and calcium. Use of such alternative fluids as a major component of the diet has been associated with severe protein energy malnutrition and with growth faltering.^{xxvii}

Nutrients from Dietary Supplements During Infancy and Toddlerhood

Iron Supplementation

AAP has concerns with the Committee's suggestion that routine iron supplementation of all breastfed infants at any age may not be advisable. According to AAP policy, iron supplementation for breastfed infants should begin at 4 months of age with 1 mg/kg/day of oral iron or until the infant consumes adequate oral iron from foods or iron-fortified formula.^{xxviii} For partially breastfed infants, the proportion of human milk versus formula is uncertain; therefore, beginning at 4 months of age, partially breastfed infants (more than half of their daily feedings as human milk) who are not receiving iron-containing complementary foods should also receive 1 mg/kg per day of supplemental iron.^{xxix}

The Committee's finding that human milk-fed infants who are supplemented with iron may have slower growth is based on clinical studies that are nearly two decades old and of somewhat questionable reliability. The harm to growth observed in these studies was minimal and not present in both cohorts, suggesting that it may not be a real phenomenon. Further, no data was studied regarding iron supplementation in the United States population.

USDA and HHS should take care to note in the 2020-2025 DGA the important neurocognitive benefits of iron as well as the relationship between iron deficiency and later cognitive deficits. Given that iron is the world's most common single-nutrient deficiency and there is some evidence of adverse effects of both iron deficiency and iron-deficiency anemia on cognitive and behavioral development, it is important to minimize iron deficiency and iron-deficiency anemia in infants and toddlers without waiting for unequivocal evidence.^{xxx}

The Committee's suggestion that an alternative to routine iron supplementation would be to screen for iron deficiency among higher-risk infants younger than 6 months and providing iron supplements only to those with biomarkers indicating iron deficiency is ill-advised. These tests are costly and not child-friendly. Further, data shows that a substantial proportion of infants, especially but not limited to breastfed infants, do not consume adequate iron from solid foods in the 6 to 12-month age period. This is why AAP guidance suggests iron supplementation until appropriate iron-containing complementary foods (including iron-fortified cereals) are introduced in the diet. The iron intake between 6 and 12 months of age should be 11 mg/day. To augment the iron supply, liquid iron supplements are appropriate if iron needs are not being met by the intake of formula and complementary foods.

Subjecting very young children to blood tests to ascertain iron status for a theoretical risk of not needing supplementation adds to the cost and complexity of medical care for this group of children that already requires considerable pediatric health care provider attention. AAP worries that adoption of the Committee's recommendations regarding iron supplementation may lead to denial of coverage for iron supplementation for low-income parents who participate in WIC or Medicaid without costly, uncomfortable blood tests, which will likely result in an increase in iron deficiency anemia.

We urge USDA and HHS to remove the recommendation of the DGAC to not provide routine iron supplementation to breastfeeding infants in the DGA. Iron supplementation needs of infants should be addressed by a physician in accordance with AAP guidance while addressing the risk versus benefits for each individual child.

Vitamin D Supplementation

AAP agrees with the Committee's finding that current evidence does not support recommending vitamin D supplementation above 400 IU per day during infancy.

Diet and Health Relationships: Individuals Ages 2 Years and Older

AAP supports the DGAC's recommendation for a dietary pattern that is higher in vegetables, fruits, nuts, legumes, whole grains, seafood, low and non-fat dairy foods, and unsaturated vegetable oils, while being lower in red and processed meats, saturated fatty acids and cholesterol, and beverages and foods with added sugars.

Added Sugars

AAP supports the DGAC's recommendation to limit energy from added sugars to less than 6% of energy intake. Consumption of added sugars pose a significant health risk to children and adolescents. Excess consumption of added sugars, especially from sugary drinks, contributes to the high prevalence of childhood and adolescent obesity, especially among children and adolescents who are socioeconomically vulnerable. It also increases the risk for dental decay, cardiovascular disease, hypertension, dyslipidemia, insulin resistance, type 2 diabetes mellitus, fatty liver disease, and all-cause mortality.^{xxxix} The 2020-2025 DGA should recommend consumption of nutrient dense, whole foods like fresh or frozen fruits and vegetables and warn against consumption of processed foods that may be high in added sugars.

While AAP is supportive of this recommendation, we also recognize that children and adolescents are not currently meeting the recommendation of the 2015–2020 Dietary Guidelines for Americans that added sugars contribute less than 10% of total calories consumed. Currently, US children and adolescents report consuming 17% of their calories from added sugars, nearly half of which are from sugary drinks.^{xxxix} Policies must be enacted that promote a diet rich in foods with low caloric density and poor in foods with high caloric density.^{xxxix} Decreasing sugary drink consumption is of particular importance because sugary drinks are the leading source of added sugars in the US diet, provide little to no nutritional value, are high in energy density, and do little to increase feelings of satiety.^{xxxix} To protect child and adolescent health, broad implementation of policy strategies to reduce sugary drink consumption in children and adolescents is urgently needed.^{xxxix} AAP and the American Heart Association issued a joint policy statement titled *Public Policies to Reduce Sugary Drink Consumption in Children and Adolescents* that offers policy recommendations targeted at federal, state, and local policy makers to improve child nutrition through reduced sugary drink intake.^{xxxix}

Juice

Again, AAP would like to see clear recommendations regarding juice consumption in the 2020-2025 DGA for children 2 and up. Intake of 100% fruit juice should be monitored and in moderation.^{xxxix} The intake of juice should be limited to, at most, 4 ounces/day in toddlers 1 through 3 years of age, and 4 to 6 ounces/day for children 4 through 6 years of age.^{xxxix} For children 7 to 18 years of age, juice intake should be limited to 8 ounces or 1 cup of the recommended 2 to 2.5 cups of fruit servings per day.^{xxxix} Children should be encouraged to eat whole fruits to meet their recommended daily fruit intake.^{xl}

Future Research

The work of the DGAC on the first federal nutrition recommendations for pregnant and lactating women and children from birth through age 2 made clear the need for increased research related to the nutritional needs

of this population. Maternal prenatal nutrition and the child's nutrition in the first 2 years of life (1000 days) are crucial factors in a child's neurodevelopment and lifelong mental health.^{xli} Child and adult health risks, including obesity, hypertension, and diabetes, may be programmed by nutritional status during this period.^{xlii} Failure to provide key nutrients during this critical period of brain development may result in lifelong deficits in brain function despite subsequent nutrient repletion.^{xliii} Understanding the complex interplay of micro- and macronutrients and neurodevelopment is key to moving beyond simply recommending a "good diet" to optimizing nutrient delivery for the developing child.^{xliv} Specifically, we support recent calls for strengthened authority, investment, and coordination for nutrition research from the federal government.^{xlv}

Many of the studies the committee reviewed were focused on healthy Caucasian people with insufficient evidence to estimate these associations in minorities and account for racial disparities. This should be a priority for research moving forward, due to the many adverse health outcomes attributable to racial disparities, perceived racial discrimination and maternal stress.^{xlvi}

We agree with the DGAC conclusion that "further research is needed to: a) evaluate how to best identify and treat infants who become iron deficient before age 6 months, including populations with racial and ethnic diversity, and b) investigate the biological mechanisms by which iron supplementation during infancy may affect growth, including potential effects on morbidity, the microbiome, zinc and copper status, and oxidative stress or lipid peroxidation." We also recommend studies that include both predisposing factors such as early cord clamping and low birth weight, as well as outcome measures such as developmental outcomes with and without routine iron supplementation.

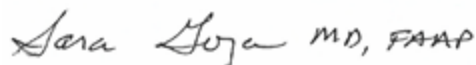
AAP would also like to see additional research regarding the relationship between breastfeeding and obesity, including how exclusive and direct breastfeeding may be linked to prevention of obesity.

Policy Recommendations

As the DGAC points out in the Scientific Report "the typical American dietary pattern is not currently nor has it ever been aligned with recommendations issued by the Dietary Guidelines for Americans since their inception in 1980". There are many environmental and structural factors that influence Americans' ability to follow the DGA. Throughout our comments we have offered some policy suggestions to improve the nutrition status of children in America. We also urge the Departments to take further steps to make healthy foods accessible and affordable and to align federal policies and programs with the DGA.

The Academy thanks USDA and HHS for the opportunity to provide comments on the 2020 Dietary Guidelines Advisory Committee Scientific Report. If we can be of any assistance, please do not hesitate to reach out to Tamar Magarik Haro at tharo@aap.org.

Sincerely,



Sara H. Goza, MD, FAAP
President

SHG/mrc

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