AMERICAN PUBLIC HEALTH ASSOCIATION
*For science. For action. For health.*

March 30, 2018

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Re: **Topics and comments to be examined in the review of the scientific evidence supporting the development of the 2020-2025 Dietary Guidelines for Americans**; Docket No. FNS-2018-0005-0001

Dear Dr. Wright, Mr. Lipps, and Ms. Koegel:

On behalf of the American Public Health Association, a diverse community of public health professionals that champion the health of all people and communities, I appreciate the opportunity to provide comments in response to the proposed topics for the development of the 2020-25 Dietary Guidelines for Americans. APHA would like to underscore that in the past, the process for developing the guidelines has been driven by strong science, and previous Dietary Guidelines Advisory Committees have exhibited expertise and scientific integrity. The DGA recommendations have remained relatively consistent over the years—encouraging a diet rich in fruits, vegetables, and whole grains, while limiting excess sodium, saturated fat, and sugars. APHA appreciates the U.S. Departments of Agriculture's and Health and Human Services' efforts to strengthen the process for developing the guidelines in response to the reports issued by the National Academy of

Medicine and the expansion of the guidelines to offer recommendations for pregnant women and infants and toddlers up to 24 months of age in response to the Agriculture Act of 2014.

APHA offers the following suggestions for emphasis in the 2020-25 Dietary Guidelines for Americans:

- Nutrition-related health inequities and food insecurity across the lifespan should receive attention in all recommendations.
- Emphasis should be placed on including multi-ethnic daily and weekly dietary patterns, with foods eaten at home and away from home and on recommending portion size for all foods including protein foods, grain goods, dairy and non-dairy foods, fruits, vegetables, and beverages that make up a healthy diet.
- Recommendations should emphasize the urgency of comprehensive, nationwide action needed to address the many costs of our country's poor progress in healthy eating, and cite the benefits of adopting stronger nationwide approaches.
- More emphasis should be given to the caloric content of foods, proportional increases of calories with increased serving sizes, and amount of physical activity that is needed to expend the excess calories consumed.
- Provide examples of multi-component approaches that combine dietary and physical activity strategies to help prevent obesity and chronic diseases in schools, child care centers, worksites and other organized settings social, civic and service organizations.
- Attention should be given to how the final recommendations will be communicated and taught to a broad audience that will implement them in their home or in a food service operation.

Below we expand on these and other issues.

## I. Topics that should be addressed across the lifespan.

**The Dietary Guidelines should not omit critical topics that were addressed by earlier DGA and apply to all age groups.**

### a. Sodium

It is troubling that USDA and HHS include no questions on sodium when expert guidelines[1] classify roughly one out of two adults as hypertensive, and new data from the CDC indicate that the average American adult consumes 4,000 mg of sodium per day, well above the 2,300 mg per day recommended by the National Academy of Medicine.[2] Furthermore, a convincing body of evidence demonstrates that reducing sodium intake can lower blood pressure and the risk of cardiovascular disease, despite confusion created by studies that do not measure sodium intake accurately.[3] We understand that the academy is in the process of revising the Dietary Reference Intakes for sodium and believe that the DGAC should defer to the substantive outputs of that process, if available. In short, the guidelines should either include the DRI committee's advice or—if the DRIs are not available before the 2020 guidelines must be finalized—include advice on sodium from the 2015 guidelines. Ignoring sodium entirely puts public health at risk.

### b. Whole Grains

Previous guidelines have advised Americans to "make half of all grains whole grains," yet the departments' proposed list of questions lacked any reference to whole grains. That message is critical, given that all age and sex groups fail to meet recommended intakes of whole grains and nearly all exceed recommended intakes of refined grains.[4] Since the publication of the 2015

guidelines, the evidence supporting advice to replace refined grains with whole grains has grown. For example, in 2016 researchers examining 45 studies reported that people who typically consume three servings of whole grains a day have about a 20 percent lower risk of dying of heart disease and a 15 percent lower risk of dying of stroke or cancer than those who consume no whole grains.[5] We urge the departments to either ask the DGAC to provide a quantitative recommendation for whole grain intake, or to continue to advise the public in reliance on the 2015 DGA's sound and scientific advice to make at least half of the grains consumed be whole grains.

**c. Vegetables and Fruit**

The 2015 guidelines recommend a healthy eating pattern with 2½ cup-equivalents of vegetables and 2 cup-equivalents of fruit a day (for a 2,000-calorie diet) and advise consumers that "research has shown that vegetables and fruits are associated with a reduced risk of many chronic diseases, including CVD [cardiovascular disease], and may be protective against certain types of cancers." Since the publication of the 2015 guidelines, there is additional evidence that intake of vegetables and fruit protects health.[6] We urge the departments to either ask the DGAC to provide a quantitative recommendation for vegetable and fruit intake or to continue to support the 2015 DGA's well-founded advice for vegetable and fruit intake.

**d. Alcohol**

A "key recommendation" of the 2015 guidelines states that "if alcohol is consumed, it should be consumed in moderation—up to one drink per day for women and up to two drinks per day for men—and only by adults of legal drinking age." The guidelines also "does not recommend that individuals begin drinking or drink more for any reason," and notes that "there are many circumstances in which individuals should not drink, such as during pregnancy."

Yet in the scoping proposal the departments included only a single question about alcoholic beverages (concerning alcohol consumption during lactation and human milk composition and quantity). As is well known, alcoholic beverages increase the risk of cirrhosis of the liver and cancers of the mouth, esophagus, pharynx, larynx, liver, breast, and colon.[7] Given the enormous societal damage caused by excess alcohol consumption, the guidelines must include recommendations regarding alcohol consumption. We urge the departments to maintain this 2015 DGA advice as part of the 2020 guidelines. If the 2020 DGAs include only topics reviewed by the 2020 DGAC, the DGAC should examine the evidence that alcoholic beverages increase the risk of cancer, cirrhosis, and other health problems.

**e. Dietary Cholesterol**

All previous editions of the guidelines have included advice on dietary cholesterol, including the 2015 edition. Although that edition deleted previous advice to limit dietary cholesterol to 300 mg per day, it did advise Americans that, "as recommended by the [Institute of Medicine], individuals should eat as little dietary cholesterol as possible while consuming a healthy eating pattern." In fact, the decision to delete the quantitative advice about dietary cholesterol was ill-founded, as a number of prominent researchers argued in 2015.[8] Therefore, we urge the DGAC to revisit the issue of dietary cholesterol, or at the very least maintain as part of its 2020 recommendations the 2015 DGA advice to eat as little dietary cholesterol as possible.

**The departments should amend a number of the proposed topics and questions and consider them for all age groups.**

a. **Beverages**

The 2020 DGAC should examine the evidence on added sugars and sugar-sweetened beverages (SSB) together, because SSBs are the largest source of added sugars in the average American's diet.

b. **Added Sugars**

The 2015 guidelines recommends that people consume less than 10 percent of calories from added sugars to meet their food group and nutrient needs. In addition, the guidelines noted that an eating pattern that reduces the risk of chronic disease is low in added sugars. The 2015 DGAC examined the evidence on added sugars and SSBs together in part because SSBs are the greatest source of added sugars in the average American's diet (contributing almost half of intake) and in part because SSBs are easier to use in randomized controlled trials and easier to examine in observational studies than are added sugars. The 2020 DGAC should similarly evaluate added sugars and SSBs together.

**c. Saturated Fats**

The departments proposed that the DGAC would examine the relationship between saturated fats and risk of cardiovascular disease for adults aged 19–64. Instead, the 2020 DGAC should examine the effect of replacing saturated fatty acids with polyunsaturated fatty acids (and monounsaturated fatty acids) on the risk of CVD for children aged 2–18 and adults aged 19 and over. It is not possible to evaluate the effect of saturated fats on the risk of CVD without considering which nutrients would replace it. As a 2017 Presidential Advisory from the American Heart Association explains, studies that did not take the replacement nutrient into account have mistakenly concluded that saturated fat intake had no significant effect on CVD risk. [9,10,11] The 2015 guidelines recommends that "intake of saturated fats should be limited to less than 10 percent of calories per day by replacing them with unsaturated fats." Furthermore, the DGAC should examine the evidence on saturated fats and CVD for everyone aged 2 or older, not merely for adults 19–64, because atherosclerosis begins in childhood and continues beyond age 64.

**The departments should add topics regarding substances to avoid or minimize for all age groups, especially during critical windows of susceptibility.**

People of all ages are exposed to substances that can disrupt health and development. However, some populations receive greater dietary exposures than others, including developing children, in part because they have higher food and fluid intake per pound of body weight than do adults. Furthermore, it is widely recognized that exposures early in life, during "windows of susceptibility," when certain tissues and organ systems are developing, are of paramount importance to health. Exposures during pregnancy and early in life are increasingly[1] linked to health outcomes later in life, including cancer, obesity, diabetes, cardiovascular disease, fertility, and neurodevelopmental disease or dysfunction.[12,13,14]

The American College of Obstetricians and Gynecologists, the American Society for Reproductive Medicine, and others are calling for action to identify and reduce exposure to toxic environmental agents, recognizing that an important outcome of pregnancy is a healthy newborn, as well as a person biologically predisposed to be healthy from birth to old age.[15] In particular, it is well established that the developing brain is exquisitely sensitive to toxic insults. In cases where there is ample data, such as with certain heavy metals and alcohol, no "safe" levels for the developing brain have been identified.[16,17,18] Similarly, the susceptibility to carcinogens from exposures during pregnancy and early in life is a well-recognized public health concern.

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[1] [1] For example, the entire issue of *Reproductive Toxicology* 2017;68:1-214 is devoted to the environment and Developmental Origins of Health and Diseases.

Thus, in addition to ensuring good nutrition early in life, every effort should be made to avoid or minimize potentially harmful dietary exposures. While the current Dietary Guidelines address alcohol and provide general advice on caffeine, many other dietary exposures of concern have not been addressed. The decision to provide advice at different life stages in the 2020 Dietary Guidelines provides an opportunity to address this topic for the first time. Consumers need comprehensive advice on to help them avoid dietary exposures of concern and to provide science-based recommendations.

For each life stage, and in particular during pregnancy and early in life, USDA and HHS should add the topic "Avoiding or minimizing dietary exposures of potential concern," and the question "How can possible dietary exposures of concern be avoided or minimized at this life stage?", including for:

a. Contaminants such as lead, arsenic, and persistent pollutants which cause or are reasonably anticipated to cause cancer and/or other toxic effects (e.g., to the developing brain);
b. Naturally occurring and added caffeine (especially during pregnancy, childhood, adolescence, and young adulthood);
c. Additives that cause or are reasonably anticipated to cause cancers, according to U.S. government authorities, including Red 3, BHA, and certain flavors;
d. Additives that pose risks to certain individuals, including synthetic food dyes;
e. Pathogens such as *Salmonella* and *Cronobacter*; and
f. Other substances indirectly added to food from packaging, processing, or cooking, such as acrylamide, polycyclic aromatic hydrocarbons, heterocyclic amines, and phthalates and other plastic-related chemicals that cause or are reasonably anticipated to cause cancer and/or other toxic effects (e.g., to the developing brain).

It is not necessary for the DGAC to review evidence for each potential exposure of concern. Rather, the focus should be on providing practical, actionable advice and guidance to minimize exposures at the most sensitive times during windows of development. Moreover, if the DGAC declines to address areas of potential exposures of concern, it should publicly indicate that it is not addressing them, so that consumers are aware that the list provided it not exhaustive.

## II. Infants and Toddlers

### a. Introduction

Good nutrition throughout the first two years of life helps to lay the foundation for a child's future health well into adulthood. New research in the fields of neuroscience and the early origins of adult health is shedding light on how infants' brains develop, how children and adults become susceptible to diseases, and how capacities and skills are either nourished or thwarted, beginning during pregnancy and through the first two years of life.

A growing body of scientific research indicates that the foundations for lifelong health—including predispositions to obesity and certain chronic diseases—are largely determined during pregnancy and the first two years. Emerging research also indicates that the effects of poor nutrition early in life impact not only a child's health but also that of the child's offspring. In this way, the damaging effects caused by poor nutrition in early life have the potential to cascade down through generations of children and lock families into a cycle of poor health.

**b. Age groupings**

There are many differences in the nutritional and dietary needs of infants younger than six months and those between the ages of six months and two years. In particular, infants younger than six months should be exclusively fed breastmilk (and/or receive infant formula). Infants who are not fed complementary foods may also have different supplementation needs than do older infants fed complementary foods. For this reason, the DGA topics should be considered separately for infants zero to six months than for those aged seven to 24 months.

**The DGAC should consider the following additional topics for infants and toddlers.**

**a. Feeding Styles**

The period of time from birth to age two represents a highly sensitive period of time for children to learn to accept and like healthy food.[19] The DGAC should examine the impact of feeding patterns and responsive feeding practices on cognitive development, short- and long-term health, growth, size, and body composition, and future obesity risk.

**b. Food Insecurity**

The DGAC should consider the relationship between food insecurity and 1) dietary intake; 2) nutritional risk or deficiency; 3) cognitive development; 4) short- and long-term health; 5) obesity risk; and 6) growth, size, and body composition. Food insecurity during pregnancy and the critical first years of a child's life can impair child development in both the short- and long-term, hindering adult achievement, health, and productivity. Adequate prenatal nutrition is critical to ensure normal development of children's bodies and brains.[20] Inadequate dietary intake during pregnancy and early childhood—which may be a consequence of food insecurity—can increase the risk of birth defects, anemia, low birth weight, preterm birth, and developmental problems.[21,22,23]

**The departments should amend the following proposed topics and for infants and toddlers.**

**a. Duration of exclusive human milk or infant formula feeding**

The DGAC should consider the short- and long-term health and developmental outcomes of exclusive human milk feeding on neurocognitive development, taste preference formation, self-regulation, childhood origins of adult disease and obesity, infection risk, and immunity. The DGAC should also consider when to recommend that mothers discontinue exclusive breastfeeding and/or infant formula feeding.

**b. Dietary Supplements**

Guidance on the topic of dietary supplements during pregnancy, lactation, and infancy would inform nutrition education provided by federal food and nutrition policies and programs, like the Special Supplemental Nutrition Program for Women, Infants, and Children, Supplemental Nutrition Assistance Program, and the Child and Adult Care Food Program. It may also be used to inform nutrition education materials provided by the Center for Nutrition Policy and Promotion.

**c. Complementary Foods and Beverages**

In a 2013 study, nearly 40 percent of mothers in the U.S. first gave their babies solid foods before their babies were 4 months of age.[24] There is confusion regarding recommendations of when babies should be introduced to solid foods, as parents face conflicting messages from doctors, infant and toddler food companies, and others. If breast milk or formula is replaced by complementary foods too early, babies are at risk for poorer nutrition. The relationship between complementary feeding

and short- and long-term health outcomes, neurocognitive development, self-regulation, and taste preference formation should also be considered by the DGAC.

The DGAC also should address beverages, including fruit juice and sugar-sweetened beverage consumption, for children and toddlers. The DGAC should consider impacts on short- and long-term growth, obesity risk and excessive weight gain; diet quality; micronutrient status; short- and long-term health outcomes; taste preference formation; growth, size and body composition; and self-regulation.

**III. Children and Adolescents**

The DGAC should consider whether to recommend reducing exposure to synthetic dyes. Dyes have no nutritional or public health benefit—they are added for cosmetic purposes and are often used to make unhealthy foods more appealing. For example, Tropicana Twister Cherry Berry Blast, despite its name and a label showing images of cherries and berries, has no cherry or berry juice. Much of its dark red color comes from Red 40, and there is more high fructose corn syrup than even apple and grape juice concentrate. Furthermore, the Food and Drug Administration reported in 2011 that synthetic dyes are associated with adverse behaviors in some susceptible children with Attention Deficit/Hyperactivity Disorder or other problem behaviors[25] and possibly in other susceptible children from the general population.[26] At the time, the FDA concluded that the evidence was not sufficient to establish a causal relationship between exposure to synthetic food dyes and hyperactivity in the general population.[27]

Since 2011, eight additional reviews of the evidence, including two meta-analyses, concluded that excluding food dyes—or a diet that eliminates dyed foods and certain other foods and ingredients—reduces adverse behavior in some children.[28,29,30] The American Psychiatric Association states in the most recent edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) that "a minority of cases [of Attention-Deficit/Hyperactivity Disorder] may be related to reactions to aspects of diet,"[31] and cites two of these reviews.[32,33] Throughout the European Union, a warning notice—"may have an adverse effect on activity and attention in children—is required on foods that contain certain dyes, including the three most widely used food dyes in the United States.[34] Yet many Americans are unaware that synthetic food dyes can trigger adverse behavioral reactions in certain individuals.

The FDA estimates that all American children ages 2 to 5 and teenage boys ages 13 to 18[2] consume foods and beverages dyed with Red 40, Yellow 5, Yellow 6, and Blue 1.[35] One study found that more than 90 percent of child-oriented candies, fruit-flavored snacks, and drink mixes and powders are artificially colored.[36] Dyes have no nutritional or public health benefit—they are added for cosmetic purposes and are often used to make unhealthy foods more appealing.

**IV. Pregnancy and Lactation**

Topics should be evaluated separately for pregnant and postpartum women. The nutritional and dietary needs of pregnant women differ from those of lactating and non-lactating postpartum women. For example, for food safety reasons, pregnant women are advised against consuming some types of cheese or processed meats, but those foods are acceptable for postpartum women, even if they are breastfeeding. Further, pregnant women need different nutrient supplements than postpartum lactating women or non-lactating women.

[2] Other age and sex groups were not studied.

**The DGAC should consider the following additional topics for pregnant and/or postpartum women.**

**a. Diet Quality**

It is clear that diet plays a critical role in the health and well-being of women, both during and after pregnancy. Diet quality is related to the micronutrient status and weight of women, factors that are intrinsically linked to birth outcomes and the health of mothers. Among U.S. women giving birth in 2014, half were overweight or obese before becoming pregnant.[37] Being overweight or obese can create or exacerbate complications, such as preeclampsia and gestational diabetes, which lead to higher-risk pregnancies. Similarly, key nutrients play important roles in women's health during and after pregnancy.

Specifically, the DGAC should evaluate the relationship between diet quality during pregnancy and 1) risk of gestational diabetes; 2) risk of hypertensive disorders during pregnancy; 3) gestational age at birth; and 4) birth weight standardized for gestational age and sex; 5) the risk of excessive weight gain during pregnancy; 6) the micronutrient status of the mother and infant; 7) the long-term health of both mothers and infants; and 8) the infant's predisposition to chronic disease later in life. In addition, the DGAC should consider the relationships between diet quality of postpartum women and 1) excessive weight gain; 2) the short- and long-term health of mothers; and 3) micronutrient status.

**b. Food Insecurity**

The DGAC should consider the relationship between food insecurity and 1) dietary intake; 2) pregnancy outcomes (e.g., pregnancy weight gain); and 3) breastfeeding initiation and duration. Of particular concern is the risk for food-insecure mothers who enter pregnancy with insufficient iron stores and with low-folate diets. Poor iron and folate status are linked to preterm births and fetal growth retardation, respectively.[38,39] Prematurity and intrauterine growth retardation are critical indicators of medical and developmental risks that affect not only children's short-term well-being, but also extend into adulthood.[40]

Children born to mothers who were food-insecure during pregnancy may also be at increased risk of birth defects.[41] Finally, research suggests that women who were marginally food insecure and had restricted their eating in an unhealthy way prior to becoming pregnant are more likely to gain excessive weight during pregnancy, which puts the mother at risk for gestational diabetes and obesity postpartum, and can predispose the baby to chronic disease through prenatal nutritional programming. [42]

**The departments should amend the following proposed topics and for the DGAC for pregnant and/or postpartum women.**

**a. Dietary patterns and maternal health**

The DGAC should not only consider the relationship between dietary patterns during pregnancy and risk of gestational diabetes, risk of hypertensive disorders during pregnancy; gestational age at birth; and birth weight, but also the relationship of dietary patterns during pregnancy and lactation to maternal health.

**b. Dietary supplements**

The DGAC should consider not only the impact of micronutrient status on infants and the composition and quantity of breastmilk, but also the impact on the short- and long-term health and micronutrient status of the mother.

**c. Beverages**

As mentioned in Section II, the DGAC should consider added sugars and sugar-sweetened beverages together. The DGAC should consider the relationship between the consumption of added sugars and sugar-sweetened beverages by postpartum women and 1) maternal health; 2) weight gain; and 3) micronutrient status. For pregnant women, the relationship between sugar-sweetened beverages and added sugars and excessive weight gain should be considered.

**d. Alcoholic beverages**

As addressed above, the DGAC should consider the impact of alcoholic beverages on birth outcomes and maternal health for women who are pregnant or lactating.

## V. Adults

While we are pleased that the guidelines will offer recommendations to a broader, more diverse population through the lifespan approach, the proposed age groups and topics fail to address issues in all relevant life stages. Therefore, sodium, whole grains, fruits and vegetables, alcohol, dietary cholesterol, saturated fats, added sugars and beverages, and dietary exposures should be considered for all age groups aged two and older, as addressed in Section II above.

## VI. Older Adults

Several questions proposed by USDA and HHS create an arbitrary distinction between adults ages 19–64 and adults aged 65 and older. In fact, most evidence concerning diet and risk of disease applies to both age groups. Rather than review the evidence for the two age groups separately, the DGAC should consider the evidence for all adults for most outcomes. The DGAC could conduct a separate review for adults over 80 for topics that do not occur at younger ages, such as impaired dentition and reduced muscle strength. An estimated 15 percent of men and 22 percent of women aged 80 or older—but only 2 percent of men and women aged 60 to 79 have "weak muscle strength."[43]

## VII. Conclusion

Thank you for the opportunity to provide comments on the proposed topics for the 2020 DGAC. In summary, we appreciate the lifespan approach and the addition of guidance for pregnant women, infants, children and adolescents, adults, and older adults. We also support opportunities to make the DGA process more transparent.

We strongly encourage the departments to consider adding to and amending several of the proposed topics to better serve Americans with more complete nutrition advice.

Sincerely,

Georges C. Benjamin, MD

Executive Director

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