

29 March 2018

USDA Food and Nutrition Service
Center for Nutrition Policy and Promotion
3101 Park Center Drive
Suite 1034
Alexandria, VA 22302

RE: Comments on Docket No. FNS-2018-0005-0001 for “Dietary Guidelines for Americans: Request for Comments on Topics and Questions”

To whom it may concern,

The North America branch of the International Life Sciences Institute submits these comments in response to the USDA and HHS request for input on the topics and questions to be examined in the upcoming review of scientific evidence supporting development of the 2020-2025 Dietary Guidelines.

Major themes summarized here are described in the attached document providing science-based rationale for new evidence, on important and relevant topics identified for specific additions and revisions to the topics and questions posted online by USDA and HHS.

1. Consider **health promoting dietary components beyond “nutrients”** defined using current criteria based on deficiency symptoms in revising several of the currently proposed questions.
2. Consider the importance of specific **diet composition in adult years for its potential to maintain health in later years (65+)**.
3. Support currently proposed questions regarding **type of saturated fatty acids**, but also add specifics on substituting mono- and poly- unsaturated fats for saturated fat. [Need to get this clarified]
4. Questions about **sugar** should be broader, including low/no calorie sweeteners.
5. The infant and toddler life stage should include a question about the role of **fiber for maintaining digestive health**.
6. The age categories of children and adolescent, adult women, and older adults should include a question about the role of **fortified and enriched foods** in achieving recommended nutrient intakes.

The attached document provides specific topics, questions, and rationale with supporting scientific references.



International Life Sciences Institute - North America Branch

Submitted in response to the USDA and HHS request for comments from the public.
March 2018

Red italicized text indicates revisions and additions to USDA/HHS proposed topics and questions.

Theme #1) Consider **health promoting dietary components beyond “nutrients”** defined using current criteria based on deficiency symptoms, in revising several of the currently proposed questions.

Beverages
Revise topic and question, plus add new question to: Children and adolescents, ages 2-18 years old Adults, ages 19-64 years old Older adults, ages 65 years and older
<u>Revise topic:</u> Beverages (cow’s milk, water, 100% fruit juice (<i>fruit, vegetable, or combination juice</i>), sugar-sweetened beverages, milk alternatives, <i>low-/no-calorie beverages</i> , and caffeinated beverages.
<u>Revised question:</u> What is the relationship between beverage consumption during adulthood and achieving <i>food groups, nutrients, and additional health promoting components (like flavonoids)</i> ? [Replace “adulthood” with appropriate language for the other life stages]
<u>Rationale:</u> Beverages such as tea and coffee (in both decaffeinated and caffeinated forms), as well as specific fruit and vegetable juices provide health-promoting bioactive components that are not defined as “nutrients” due to their not fitting the current paradigm for deficiency symptoms. A recently completed evidence map will be available by 2019 to inform this relationship [Raman, G et al. “Dietary Intakes of Flavan-3-ols and Cardiovascular Health: A Field Synopsis Using Evidence Mapping” Biomed Central – Systematic Reviews. Manuscript submitted]. New evidence has been published in the past 5 years culminating in a systematic review currently underway quantifying the relationship between flavan-3-ols and cardiovascular disease risk and events [Tufts University research to be completed by 2019].

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Diet Patterns

Revised question for all life stages

Topic:

Dietary patterns to promote health, prevent disease, and meet nutrient needs.

Revised question:

Are changes to the USDA Food Patterns (*including foods and beverages*) needed based on the relationships identified? If so, how well do USDA Food Pattern variations meet nutrient recommendations *as well as health promoting dietary components that are not currently defined as “nutrients” (including fiber, flavonoids, and lutein/zeaxanthin)* for adults? [Replace “adults” with appropriate language for the other life stages]

Added question:

What modifications to dietary patterns are effective in promoting healthy vision and cognitive function among adults (taking into consideration nutrients as well as health promoting dietary components like omega-3 fats, lutein/zeaxanthin, and flavonoids)? [Replace “adults” with appropriate language for the other life stages]

Rationale:

Health promoting dietary components represent a diverse range of naturally occurring food and beverage components, including omega-3 fatty acids, flavonoids, and lutein/zeaxanthin. For example, experts recently reported that “establishing dietary guidance for lutein would encourage the consumption of lutein-containing foods and raise public awareness about its potential health benefits” [Ranard, et al. “Dietary guidance for lutein: consideration for intake recommendations is scientifically supported.” *Eur J Nut* Dec 2017 (56 supp 3):37-42.] New evidence linking bioactive dietary components with health outcomes will be available to inform the 2020-2025 dietary guidelines, including two systematic evidence reviews will be completed in 2018 [Systematic reviews underway at Tufts University on lutein/zeaxanthin rich macular pigment density/vision and flavan-3-ols/cardiovascular risk and outcomes.]

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Human milk and/or infant formula feeding
Infants and toddlers from birth to 24 months (healthy, full-term infants)
Revised topic: <i>Composition</i> , frequency, and volume of human milk and/or infant formula feeding.
Added question: <i>What is the relationship between the composition, frequency, and volume of human milk and/or infant formula consumption on intake of health promoting components beyond defined nutrients, as they relate to specific relevant health outcomes (like neurocognitive development)?</i>
Rationale: In addressing the special dietary needs for infants and toddlers, certain health promoting dietary components not currently defined as “nutrients” in the U.S., based on current definitions being based on deficiency, should be considered. For example, DHA and arachidonic acid have been shown to contribute to infant health [Koletzko, Ann Nutr Metab 2015;66:137-138 and Colombo, PLEFA 121 2017;121:52–56]. With the growing interest in the developing gut microbiome infant formulas products containing pre-biotics are now available, including human milk oligosaccharides [Donovan, Ann Nutr Metab 2017;69:42-51].

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Theme # 2. Consider the importance of specific diet composition in adult years for its potential to maintain health in later years (65+).

Diet Patterns	
ADD new question to adults, ages 19-64 years old	
<u>Topic:</u>	Dietary patterns to promote health, prevent disease, and meet nutrient needs.
<u>New question:</u>	<i>What modifications to dietary patterns are effective in building and maintaining muscle mass or bone density during adult years to achieve healthy outcomes in middle and later life?</i>
<u>Rationale:</u>	<p>Currently proposed USDA/HHS questions address diet associations with muscle mass and bone density only among the 65+ age group, which misses the opportunity to invest in lean body tissues in mid-life to improve prospects during later stages of age-related decline.</p> <p>For example, dietary protein levels defined by the <i>minimum</i> amount to maintain muscle turnover overlooks the potential for higher protein diets to achieve optimal health. A paradigm shift in terms of protein intake recommendations in middle age, as they relate to improved prospects of health later in life needs to be informed by evidence. New evidence is emerging, including research currently underway to determine links between higher protein intakes starting in mid-life with multiple health outcomes over up to 20 years of follow-up using the Framingham 2nd Generation Cohort study [Tufts University research: "Longitudinal study of protein intake and health in the Framingham Cohort Study." Manuscripts currently submitted for publication will be available for the upcoming dietary guidelines evidence reviews.]</p>

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Theme # 3. Support currently proposed USDA/HHS question regarding **type of saturated fatty acids**, but also add specifics on substituting mono- and poly-unsaturated fats for saturated fat.

Fat
Revised question for adults, ages 19-64 years olds
<u>Topic:</u> Saturated fat.
<u>Revised questions:</u> What is the relationship between saturated fat consumption (types and amounts) <i>and the impact of their replacement with mono- or polyunsaturated- fats</i> during adulthood and risk of cardiovascular disease?
<u>Rationale:</u> The recently published WHO systematic review and meta-analysis quantified the relationship between saturated fats (SFA) of differing chain lengths on serum lipids and lipoproteins, underlining the importance of type of saturated fats [Mensink, R. "Effects of saturated fatty acids on serum lipids and lipoproteins: a systematic review and regression analysis." WHO. 2016. Online report. ISBN 978 92 4 156534 9], supports the currently proposed question indicating that both types and amounts of SFA be evaluated. Translational evidence reviews are currently underway by an expert working group addressing whether dietary guidelines should differentiate individual SFA's [ILSI Europe Task Force on "Qualitative Fat Intake" http://ilsi.eu/task-forces/nutrition/qualitative-fat-intake/].

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Theme #4: Questions about **sugar** should be broader, including low/no calorie sweeteners.

Sugar and alternatives	
Revised question for children and adolescents, ages 2-18 years old	Revised question for adults, ages 19-64 years old
<u>Revised topic:</u> <i>Added</i> Sugars and alternatives.	
<u>Added question:</u> <i>What is the relationship between low/no calorie sweeteners and health outcomes (including glycemic response) among normal and among metabolically at risk/affected?</i>	
<u>Rationale:</u> Low-/no- calorie sweeteners present a potential mechanism for reduced glycemic response, which is associated with multiple metabolic health outcomes. A recently published knowledge map of evidence corresponding to low/no calorie sweeteners and multiple health outcomes indicated substantial evidence for glycemic response as an outcome [Wang et al. "Creating a literature database of low-calorie sweeteners and health studies: evidence mapping." BMC Medical Research Methodology (2016) 16:1]. An evidence review of the relationship between low-/no- calorie sweeteners and glycemic response is anticipated by 2019, including for healthy population and those metabolically compromised [ILSI NA request for proposals].	

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Theme #5. The infant and toddler life stage should include a question about the role of **fiber for maintaining digestive health.**

Fiber
Infants and toddlers from birth to 24 months (healthy, full-term infants)
<u>New topic:</u> <i>Digestive health.</i>
<u>New question:</u> <i>What is the role of fiber in maintaining normal digestive function among infants and toddlers?</i>
<u>Rationale:</u> <p>Fiber rich diets are recognized in the DRI's for helping maintain laxation (NAS "Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids." 2002). In this report from 2002, a recommended fiber intake is quantified for toddlers but not infants. New evidence is available to examine the relationship between fiber and health among infants and toddlers. A database on fiber and health outcomes recently became available to conduct systematic evidence reviews examining associations between fiber and 10 health outcomes. The 2018 update will include infants and toddlers, which enables a review of evidence between fiber and digestive regularity in terms of normal healthy laxation, as one example. The database is currently available at: the AHRQ Systematic Review Database Repository and the ILSI website [http://ilsina.org/our-work/research-tools-open-data/dietary-fiber-database/]; the version with infants and toddlers is scheduled to be posted by January 2019.</p>

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Theme #6. Children and adolescent, adult women, and older adults should include a question about the role of **fortified and enriched foods** in achieving recommended nutrient intakes.

Fortified and enriched foods
New question for children and adolescents, ages 2-18 years old Also applies to other life-stages, such as adult women and older adults.
<u>New topic:</u> <i>Fortified and enriched foods.</i>
<u>New question:</u> <i>What is the role of fortified and enriched foods in meeting nutrient recommendations for children and adolescents.</i> [This question also applies to other population sub-groups such as older adults with low energy but high nutrient needs and to women of childbearing ages not taking prenatal supplements but with pregnancy potential.]
<u>Rationale:</u> Evidence shows that fortified and enriched foods play a role in helping the US population meet nutrient recommendations. In one example, Berner et al. quantified the role of fortified and enriched foods for children and adolescent diets showing that “nutrient enrichment and fortification contributed half or more of the intakes of vitamin D, thiamin, and folate; 19.9% to 47.1% of the intakes of vitamin A, vitamin C, riboflavin, niacin, B-6, B-12, and iron; 12.1% to 18.4% of the intake of zinc; 4.5% to 6.6% of calcium intake” [Berner, et al. “Fortified Foods Are Major Contributors to Nutrient Intakes in Diets of US Children and Adolescents” JADA July 2014. 114(7):1009-1022]. New evidence, available from a recently updated food fortification database based on NHANES What We Eat In America, can be used to model the role of enriched and fortified foods for several nutrients by population groups of all ages (including vitamins A, C, D, E, B6 and B12, and folate, thiamin, riboflavin, niacin, iron, zinc, calcium, magnesium and potassium). The database is available from ILSI North America [ilsina@ilsi.org].

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