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Dietary Guidelines Advisory Committee
Kristin Koegel
USDA Food and Nutrition Service
Center for Nutrition Policy and Promotion
3101 Park Center Drive, Room 1034
Alexandria, VA 22302

Submitted via electronic mail: www.regulations.gov

Re: Docket FNS-2019-0001: Comments Relevant to the Development of the 2020-2025 Dietary Guidelines for Americans

Dear Dietary Guidelines Advisory Committee,

The Institute of Food Technologists (IFT) appreciates the opportunity to provide input on the 2020-2025 Dietary Guidelines for Americans. IFT, a global organization of over 16,000 individual members from over 100 countries, brings together professionals from academia, government, and industry to apply the science of food and technology to solve the world's greatest food challenges. We believe that science is essential to ensuring a global food supply that is sustainable, safe, nutritious, and accessible to all.

IFT believes that the Dietary Guidelines for Americans (DGA) should help maintain or improve nutrition, health, and food safety, and foster behavioral change through recommendations that are science-based, clearly understandable, practical, affordable, actionable, and implementable. Food scientists and technologists share a commitment to develop healthy food products, which is key for a successful alignment and implementation of the DGA. Nearly all available food products have been developed through the application of food science and technology. However, food scientists and technologists and their perspectives are not directly represented in the Dietary Guidelines Advisory Committee.

Dietary Guidelines are aspirational in nature; however, they should be realistic and practical. IFT emphasizes that the DGA should be based on sound science and include recommendations for dietary changes that enable implementation and maximize adoption in a sustainable manner by all Americans. Food scientists and technologists are able to translate and scale traditional and culinary recipes as well as create new innovations and improve upon existing ones. They formulate and produce food products that:

- 1 Are safe, nutritious, accessible, palatable, affordable, and scalable,
- 2 Help consumers meet their nutrient and dietary needs, and
- 3 Enable consumers to meet dietary guidelines, by providing food and beverage options that meet various dietary and cultural preferences, health needs, and resource constraints.

1) Food formulation and production is critical for safe, nutritious, accessible, palatable, and affordable food supply

It is important to recognize that without a safe and sustainable food supply, efforts to improve nutrient and diet quality are fruitless. Thus, attention to processing, packaging, ingredients, and supply chain innovations; efficient natural resource use and waste disposal; as well as advances in science and technology that address nutrient demands, microbial and other food safety aspects, and reduce food loss and waste are critical, especially as we move to 2020 and beyond.

2) Food formulation and production plays an important role in helping consumers meet their nutrient and dietary needs

Food scientists and technologists employ various approaches to formulate and manufacture food products that meet the needs of consumers, including nutrition, across all life stages and socioeconomic strata. The techniques applied to enhance nutrient content include but are not limited to: enrichment, fortification, breeding, biofortification, and biotechnology. Further, processing and packaging optimize shelf-life ensuring nutrient stability and retention, for example (DHHS/USDA 2015; IFT 2010; Weaver and others 2014). Packaging formats can deliver additional consumer benefits, such as price value, price affordability, and portion control.

Figure 1 shows how enrichment and fortification have reduced the percentage of the U.S. population (2 years and older), including racial and ethnic groups, not meeting the Estimated Average Requirement (EAR) for many essential nutrients (Fulgoni and others 2011; Malek and others 2019; Newman and others 2019). Past fortification efforts have helped reduce goiter and rickets, due to iodine and vitamin D deficiency, respectively. However, vitamin D remains a ‘nutrient of concern’ and is naturally present in very few foods. Even with fortification of milk, nearly 90 % of Americans do not get adequate vitamin D from sunlight or food, so food scientists have harnessed technologies, such as using ultraviolet light to increase vitamin D levels in mushrooms (DHHS/USDA 2015; McHugh 2015; USDA/DHHS 2010).

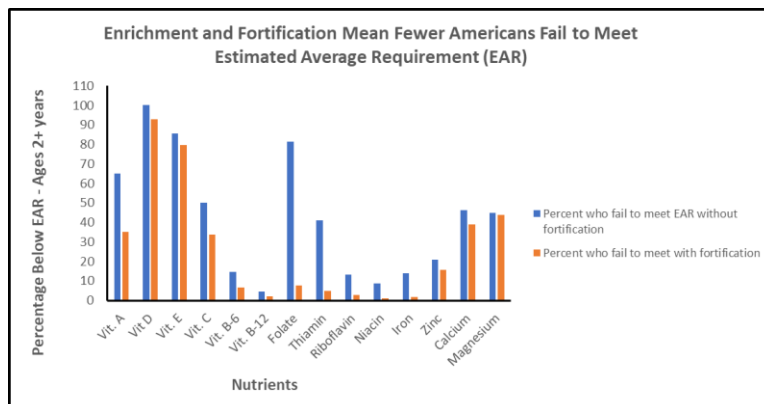


Figure 1: Effect of enrichment and fortification on nutrient intake in the U.S. (Newman and others 2019).

Iron enrichment has reduced the prevalence of iron deficiency, which affects work capacity, immunity, and brain and cognitive development, especially in children. Orange juice fortified with a bioavailable form of calcium provides a good source of calcium for those unable to ingest dairy products. The success of folate fortification for reducing neural tube defects and anencephaly was hailed by CDC as a major achievement of the last decade (CDC 2011; DHHS/USDA 2015; IFT 2010; Weaver and others 2014). Increasing the nutrient content of foods consumed frequently is a successful strategy to make nutrients

widely available to consumers at all socioeconomic levels and those with special needs, such as women of child-bearing age.

The science of food and innovations can also help address macronutrient intake. Partially hydrogenated oils have been removed in most food products, to comply with DGA and FDA labeling regulations, and technological advances, such as interesterification, biotechnology, and blending of oils can help reduce saturated fatty acids, increase monounsaturated fatty acids, while still maintaining high levels of total unsaturated fatty acids (Nachay 2018; Pszczola 2012). The U.S. population under-consumes the recommended number of servings of fish. This is concerning because omega-3 fatty acids are associated with health benefits for the general population, such as heart health. Further, Docosahexaenoic acid (DHA) consumed during pregnancy and early years is associated with fetal growth and development and improved infant health outcomes, including visual and cognitive development (Bernstein and others 2019; Colombo and others 2019; DHHS/USDA 2015; USDA/DHHS 2010). Creating plant-based sources of these important fatty acids, especially DHA, through innovative technologies, including biotechnology, could increase their availability, sustainability (for example, algae vs. fish; Pszczola 2012), and consumption among all individuals. Cohorts that could benefit greatly are vegetarians, those allergic or averse to fish and fish products, and those concerned (women who are pregnant or breastfeeding, for example) about methyl mercury in fish (Bernstein and others 2019; DHHS/USDA 2015; FDA 2019; USDA/DHHS 2010).

Sodium intakes of many Americans are far above the recommended levels, with some above the upper level, as is the case for 40 % of children 12-24 months of age and 70 % of children 24-36 months of age (Bailey and others 2018). These data emphasize the need to find innovative ways to deliver safe and palatable food products with less sodium. Both simple and advanced technologies are being used to reduce sodium content in food products. These include addition of herb/spice blends or using other minerals, such as potassium chloride. Changing the crystalline structure of salt (sodium chloride) to increase the perception of saltiness or its spatial distribution within a product to allow a carryover effect of salty taste are examples of more complex technologies (Buttriss 2013; Nachay 2013; Taylor and others 2018).

Fewer than 24 % of American adults meet recommendations for fruits and 13 % for vegetables. Twenty five percent of toddlers fail to eat any vegetable on any given day; fried potato was the most commonly consumed vegetable (Welker and other 2018). The gap between intake and recommendations could be due to many factors, such as perishability, availability, price, and lack of skills needed for food handling and cooking. On the other hand, there is a belief that fresh and minimally processed food products are better and that convenient options (canned and frozen) are inferior. This is despite the affirmation in the 2015 DGA that "all forms of foods, including fresh, canned, dried, and frozen, can be included in healthy eating patterns" (DHHS/USDA 2015). Through the application of food science and technology, food scientists and technologists can create palatable, convenient, and affordable options that align with the DGA and consumer needs. Various technologies (for example, high pressure pasteurization) to diversify fruit and vegetable forms (such as fresh, frozen, dried, canned, thermally processed products, and juice products) improve product availability, may decrease cost, and reduce food waste (Al-Sakkaf 2015; Darmon and others 2016; Evans and Redmond 2018; Li and others 2019; Mulik and Haynes-Maslow 2017; Plessz and Gojard 2013).

Previous DGA recommendations to increase fiber and whole grain intakes fostered product reformulation/formulation of grain-based foods and improved intakes of whole grain and fiber (Ahluwalia and others 2019; Albertson and others 2016; Thomas and others 2013). Despite increases in

whole grain consumption, the majority of Americans still fail to meet the recommendations (Ahluwalia and others 2019; Albertson and others 2016; DHHS/USDA 2015), and with regards to fiber intake, only 5 % of the U.S. population meet the Adequate Intake requirement (Dahl and Stewart 2015; DHHS/USDA 2015). Continuing to stress the importance of whole grains and dietary fiber in commonly consumed foods is strongly recommended. For instance, formulating palatable food products with fiber that have physiological function, may be a reasonable approach to provide more dietary fiber in the American diet, without increasing energy intake (Clemens and others 2012; DHHS/USDA 2015; Jones 2014; Nicklas and others 2011; USDA/DHHS 2010).

3) Food formulation and production enable consumers implement dietary guidelines, by providing food and beverage options that meet various dietary and cultural preferences, health needs, and resource constraints

Previous DGAs note that dietary recommendations must be applicable to all ages (2 years and older) and embrace personal dietary, ethnic and religious preferences, cultural and philosophical beliefs (for example, vegan/vegetarian and organic), and specific health needs, such as lactose or gluten intolerance (DHHS/USDA 2015; USDA/DHHS 2010; Weaver and others 2014). The recommendations must be practical and implementable, especially for individuals with limited time, money, and cooking skills and meet needs of individuals who are challenged - developmental, physical, mental or other aspects, that influence their ability to prepare and consume foods to meet their nutritional needs. Application of food science and technology allows formulation of food products that are affordable and convenient for food and meal preparation for all demographics, including food products for infants and toddlers and older adults. A wide variety of palatable food products for infants and toddlers help meet their special nutrient needs and establish healthy eating habits early in life (Dwyer 2018). For older adults, food products that meet nutrition and chemosensory needs, in addition to requiring minimal effort, easy product access with simple instructions (for example, single-serve packaging) are ways by which processed food products could help them meet their dietary goals (Baugreet and others 2017).

The DGA should be realistic and aspirational

Recommending dietary changes that are not achievable by most consumers neither improves nutrition and health nor serves the public. Recommendations must be actionable by working families with long commutes, more than one job, and multiple family demands (including the need for more quality time) and be practical and achievable by all socioeconomic strata. Recent consumer research shows that food purchasing decisions are driven by taste, price, healthfulness, and convenience, with taste and price being the primary drivers (IFIC 2019). Aspirational dietary guidance that ignore these drivers will not be readily adopted or successfully implemented.

Conclusion

Application of food science and technology is integral to addressing rapidly changing demands of the global marketplace and meeting needs for a safe, healthy, nutritious, affordable, and abundant food supply. Many consumers fail to realize that food processing has historically provided and will continue to provide a safe and abundant food supply, with significant public health benefits.

In addition to providing healthy food choices, it is also important to address perceived health benefits (for example, clean label), confusion, and negative perceptions about food processing and processed foods (Dwyer and others 2012). Dietary recommendations might be more effective if they are focused on foods to include in the diet, where the tools exist to provide multiple benefits: value, convenience, palatability, nutrition, and health benefits. Thus, the integration of food science and technology - applied in food formulation and production - and nutrition is critical. Food scientists and technologists

are ready and willing to collaborate with dietitians and nutritionists, behavioral scientists, and public health and other allied health professionals to: make positive changes in the food supply, successfully implement the dietary guidance, and improve public health.

IFT appreciates the opportunity to provide comments on 2020-2025 Dietary Guidelines for Americans. IFT and its members are committed to assisting with the Dietary Guidelines process, and we believe our scientific and technological capabilities will help in developing evidence-based dietary recommendations. We thank you in advance for your consideration of our comments. Please contact Farida Mohamedshah, Director, Nutrition Science, Food Laws and Regulations (fmohamedshah@ift.org; 202-330-4986), if IFT may provide further assistance.

Sincerely,



Michele Perchonok, PhD, CFS
IFT President, 2018-2019



Christie Tarantino-Dean, FASAE, CAE
Chief Executive Officer

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