



March 3, 2014

Designated Federal Officer, 2015 DGAC
Richard D. Olson, M.D., M.P.H.
Office of Disease Prevention and Health Promotion
OASH/HHS
1101 Wootton Parkway
Suite LL100 Tower Building
Rockville, MD 20852

RE: Subcommittee Request for Public Comments

Dear Dr. Olson and Dietary Guidelines Advisory Committee:

The American Meat Institute (AMI) is the nation's oldest and largest meat packing and processing industry trade association. AMI members harvest and process more than 90 percent of the nation's beef, pork, lamb, veal, and a majority of the turkey produced in the United States. On behalf of its member companies, AMI appreciates the opportunity to provide comment in response to the Dietary Guidelines Advisory Committee's (Committee) specific requests. AMI has and will continue to support the use of sound science as the foundation for public nutrition policy.

Consumer health is the driving force in the production of meat and poultry products, which not only includes offering nutrient dense protein food products but also improving and maintaining the safety of the food the meat and poultry industry produces. The meat and poultry industry is committed to offering diverse nutritional products to consumers so they can make educated decisions in choosing the food that best fits their personal lifestyle and family needs.

Meat and Poultry Products Play a Role in a Well-balanced Diet

AMI supports the premise that eating a balanced diet from all food groups and engaging in moderate exercise are key to a healthy lifestyle for Americans. Meat and poultry products are an important component of a healthy human diet because they provide essential amino acids, minerals such as iron, vitamins, and other dietary requirements. It is important to note animal proteins are the only single sources of all the essential amino acids. Animal proteins are very difficult to replace on a macronutrient quality basis. Meat and poultry products in the marketplace today, including processed and enhanced meat products, are available to consumers in an abundant variety of formulations at the most affordable prices found anywhere in the world.

In addition to high quality protein, meat and poultry also are important and rich sources of micronutrients such as iron, zinc, selenium, and Vitamins B₁₂, B₆, thiamin, riboflavin, niacin, and potassium. Up to 16 percent of U.S. adults and more than 20 percent over 60 years old are marginally depleted in vitamin B₁₂. Deficiency increases with age, with about six percent of those more than 70 years old being deficient in vitamin B₁₂.¹ Recent research also has demonstrated the role that meat and poultry can play in ensuring adequate vitamin and mineral intake.^{2,3,4} These nutrients are either not present in plant foods or have low bioavailability.

While meat and poultry products supply essential nutrition across the board, their high iron content is critically important to certain subpopulations, such as the 1.2 million children in America with anemia or pregnant women who are particularly at risk of anemia.⁵ The reduction of iron in the diet could lead to deficiencies that have long-term health effects if not addressed. Supplementation may be an option, but the heme iron in meat is the most absorbable form of iron known.

Throughout their life span, various subpopulations, in this case children and pregnant women, have increased protein needs during growth and development, and meat and poultry as nutrient dense foods are a logical source. Per serving, meat, poultry, and fish provide more protein than dairy, eggs, legumes, or cereals, vegetables, or nuts. Protein is critical for developing, maintaining, and repairing strong muscles and it is vital for reducing the muscle loss that often occurs with aging. Finally, research shows that meat's high protein and low carbohydrate content translates into a low glycemic index in people who consume it, which offers benefits for both weight and diabetes control.^{6,7}

The AMI Foundation outlined concerns various sub-populations could face without meat and poultry in their diet in oral testimony provided on January 14, 2014. For your convenience, a copy of those comments are included.

¹ Allen LH (2008). How common is vitamin B-12 deficiency? <http://ajcn.nutrition.org/content/89/2/693S.long>.

² Institute of Medicine, National Academy of Sciences. Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium, and Zinc. National Academy Press., Washington, DC. 2001.

³ Institute of Medicine, National Academy of Sciences. Dietary Reference Intakes for Vitamin C, Vitamin E, Selenium, and Carotenoids. National Academy Press. Washington, DC. 2000.

⁴ National Academy of Sciences. Dietary Reference Intakes for Thiamin, Riboflavin, Niacin, Vitamin B₆, Folate, Vitamin B₁₂, Pantothenic Acid, Biotin, and Choline. National Academy Press. Washington, DC. 2000.

⁵ Accessed July 2, 2010: <http://www.anemia.org/patients/feature-articles/content.php?contentid=000338>.

⁶ Leidy, Mattes. Higher protein intake preserves lean mass and satiety with weight loss in pre-obese and obese women. *Obesity*. *Obes Res*. 2007; 15: 421-429.

⁷ Donald K. Layman, Ellen M. Evans, Donna Erickson, Jennifer Seyler, Judy Weber, Deborah Bagshaw, Amy Griel, Tricia Psota, and Penny Kris-Etherton. A Moderate-Protein Diet Produces Sustained Weight Loss and Long-Term Changes in Body Composition and Blood Lipids in Obese Adults. *The Journal of Nutrition*, March 2009.

Food Safety is a Top Priority

The meat and poultry industry is not only committed to offering diverse nutritious products, but also to providing the safest meat and poultry products possible. The industry has significantly improved the safety profile of its products over the past 15 years and these improvements are reflected in federal data. As examples, regulatory testing data from U.S. Department of Agriculture's Food Safety and Inspection Service (FSIS) show:

- An 81 percent reduction of *Listeria monocytogenes* on RTE meat and poultry products between 2000 and 2011;
- An 85 percent decline of *Escherichia coli* O157:H7 in raw ground beef between 2000 and 2013;
- A 79 percent decline in *Salmonella* in young chickens from the original performance standard and a 43 percent reduction from the new standard in 2012;
- An 89 percent decline of *Salmonella* in turkey from the original performance standard and a 29 percent increase from the new standard in 2012; and
- In terms of *Salmonella*, the downward trend continues with an 85 percent reduction of *Salmonella* in market hogs, 100 percent reduction in cows and bulls, and a 75 percent reduction in ground beef, 37 percent reduction in ground chicken and a 78 percent reduction in ground turkey, all from the performance standard. Only steers and heifers saw a 12 percent *Salmonella* increase from the performance standard.

In return, the Centers for Disease Control and Prevention (CDC) data show that foodborne illnesses historically associated with meat and poultry products have declined.⁸ Between 2000 and 2012, there was a 45 percent decrease in illnesses caused by *E. coli* O157 and a 24 percent decrease in illnesses caused by *Listeria*. Despite these successes, challenges remain for the industry and it is committed to sustained progress in reducing pathogens on products and driving down human illnesses associated with those pathogens.

Sodium Plays an Important Role in Meat and Poultry Products

Sodium is essential for human health and development, particularly in regulating the body's electrolyte balance, preventing dehydration, and maintaining many of the body's cellular functions. Salt or sodium chloride plays a critical role in the production of meat products – whether used by large commercial processors, local butchers, or even within the consumer's home – to improve the flavor, texture, and safety of those products. Specifically, adding sodium chloride improves the functionality of the muscle proteins by hydration of the proteins, and allows a gel structure to form during cooking which is the biochemical principle for manufacturing products like bologna and sausages. Sodium chloride also improves tenderness of whole muscle items during cooking. The water binding of meat proteins caused by sodium chloride stabilizes the delicate protein matrix during cooking, thus producing a final product that has improved texture, tenderness, and palatability.

⁸ Incidence and Trends of Infection with Pathogens Transmitted Commonly Through Food — Foodborne Diseases Active Surveillance Network, 10 U.S. Sites, 1996–2012. *Morbidity and Mortality Weekly Report*. April 19, 2013 / 62(15);283-287.

As an ingredient in meat products, salt is used as a preservative, which is one aspect of a multi-hurdle approach toward maintaining product safety. In the last 20 years, the meat and poultry industry has also learned in more quantitative fashion the importance of sodium chloride in managing pathogenic bacterial risks presented by *L. monocytogenes*, *Salmonella*, and pathogenic *E. coli* in processed meat and poultry items. *L. monocytogenes* is of particular concern in ready-to-eat processed meat and poultry items because it is very difficult to eradicate from the environment and if products are contaminated the organism will survive and grow (even at refrigerated temperatures) unless growth inhibitor systems are used. Three common ingredients used for this purpose are sodium chloride, sodium or potassium lactate, and sodium diacetate. These inhibitors are used in up to 70 percent of processed items in the U.S. marketplace. Reduction in the use of one requires a concomitant increase in another in order to maintain the same degree of safety. Alternatives to these ingredient approaches exist but are not widespread due to ease of use, economic, and product quality reasons.

The role of sodium chloride in meat and poultry products is primarily for food safety, not the common misperception of improving flavor or product palatability. Taormina eloquently summarized the critical food safety role sodium chloride plays in producing food products in his article “Implications of Salt and Sodium Reduction on Microbial Food Safety” in *Critical Reviews in Food Science and Nutrition*.⁹ Taormina stated:

“...sufficient research has not been conducted to remove and/or reduce NaCl in processed and restaurant foods to the extent being proposed by various stakeholders through biomedical journals and other media. Governments and food protection groups must convene to weigh the societal risks versus benefits and potential economic burdens associated with imposing further restrictions on use of NaCl in food formulations. Epidemiological and clinical evidence indicates that long-term public health benefits would result from reducing NaCl in human diets. However, short-term unintended consequences related to the impact on microorganisms have not been fully explored. Regulatory action on reducing NaCl in foods without first obtaining thorough predictions on the behavior of foodborne pathogens and spoilage organisms in the food supply could lead to significant disruptions to international food commerce at best. These disruptions would be caused by microbial survival, growth, and spoilage when and where previously unexpected using processing and distribution parameters developed for the current amounts of sodium in foods. At worst, a rush to significantly reduce NaCl without research and careful planning could lead to significant increase in exposure of humans to foodborne pathogens.” (Emphasis added)

As referenced, sodium chloride also contributes to the overall palatability of a food product. Absent a new breakthrough technology for salt reduction, reductions in sodium chloride would yield meat products that would be unacceptable in texture, tenderness, and flavor to consumers. These products may ultimately never be purchased as previous attempts have not been received well by consumers and items with lower sodium have only commanded small

⁹ Taormina, P. 2010. Implications of Salt and Sodium Reduction on Microbial Food Safety. *Critical Reviews in Food Science and Nutrition*. 50(3): 209-227. DOI: 10.1080/10408391003626207. <http://dx.doi.org/10.1080/10408391003626207>.

market shares. In addition to the food safety and flavor aspects of sodium chloride in meat and poultry it also affects the texture and sensory attributes of the product. In summary, reducing sodium is not as simple as adding less and sending the product to market. The meat and poultry industry must ensure that there are no unintended food safety consequences to product reformulation.

Sodium Reduction Reformulation Is Occurring in the Meat and Poultry Industry

As stated above, consumer health is the driving force in the production of meat and poultry products. In response to public requests the meat and poultry industry is actively involved in efforts to reduce sodium in our products with more than 50 percent of the processed meat and poultry market undergoing recent sodium reduction reformulation.

A recent study published in *JAMA Internal Medicine*¹⁰ found that while there have not been statistically significant reductions in sodium content of processed or restaurant foods between 2005 and 2011, some of the greatest decreases occurred in meat products. The study's authors analyzed sodium levels in 480 packaged and restaurant foods from 2005-2011 and did not find dramatic across-the-board reductions. The analysis, however, highlighted the significant reductions in some retail products during the period: pork -27 percent and sliced deli turkey breast -21 percent, among others.

AMI estimates more than 70 percent of its members are actively involved in efforts to reduce sodium. Some companies are promoting their efforts with nutrient content claims and others are quietly making reductions without alerting consumers. Also, reduced sodium products are included in current product categories.

Lower sodium meat or poultry products are being developed or existing products are being reformulated. Importantly, these reformulations can take several months and may often involve a trade-off such as reduced shelf-life, the use of ingredient substitutes that are not familiar to the consumer, or increased price. AMI members consider consumer expectations of their products, specifically safety and shelf-life expectations. Reformulation requires undertaking extensive food safety challenge studies and these tests take a minimum of four months per product variation. Additional scientific protocols follow for quality, shelf-life, and sensory acceptability.

Changing the formulation of a product can also result in losses in manufacturing efficiency or the sustainability of the process because when products are altered, more changeover time is required as the product moves through various facilities in the food supply chain. One important aspect of the food supply chain is ensuring adequate cold storage is available to maintain the highest food safety and quality expectations.

¹⁰ Michael Jacobson, Stephen Havas, Robert McCarter. Changes in Sodium Levels in Processed and Restaurant Foods, 2005-2011. *JAMA Internal Medicine*. Published online May 13, 2013. DOI: 10.1001/jamainternmed.2013.6154.

New formulations generally also necessitate allergen control, approval of new ingredients, and label revisions, which for meat and poultry products must receive regulatory approval from FSIS after reformulation and all safety testing is complete. This regulatory approval process can add weeks, sometimes months, to the reformulation process.

Sustainability is Outside the Scope of the Committee's Charge.

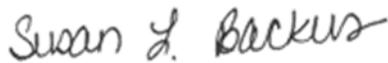
The Dietary Guidelines Advisory Committee is comprised of experts in nutrition and epidemiology. To address the variety of issues attendant to sustainability is outside the Committee's expertise and could dilute the importance of the Committee's recommendations. Sustainability is a complex issue that is being addressed by various experts in a number of other forums. Until those expert panels have drawn more concrete conclusions it would be premature for the Committee to incorporate such considerations into its dietary guidance recommendations. To do so runs the risk the Committee will act on incomplete data. Concerning the Committee's interest in specific comments on industry activities addressing sustainability, the meat and poultry industry is in the forefront with respect to ensuring future viability and availability of resources to sustain its businesses.

Summary

In summary, meat and poultry products play an important role in a healthy, well-balanced diet. Animal-derived proteins are the only single sources of all essential amino acids. By including meat and poultry in their diet, consumers can more easily fulfill their macronutrient requirements. The industry is committed to providing safe, wholesome, and diverse nutritional products to consumers so they can make educated decisions in choosing the foods that best fits their personal lifestyle and family needs. The industry responds to consumer wants and expectations regarding the production of meat and poultry products.

AMI appreciates the opportunity to provide these comments. If you have any questions about any aspect of these comments or would like to discuss them, please contact us at sbackus@meatami.com or bbooren@meatami.com. Thank you.

Respectfully submitted,



Susan L. Backus
Vice President, AMI Foundation



Betsy L. Booren, Ph.D.
Vice President, Scientific Affairs

Attachment

cc: Jim Hodges



**Intended Testimony of Betsy Booren, Ph.D., Vice President of Scientific Affairs
To the
Dietary Guidelines Advisory Committee**

January 14, 2014

Affiliation: American Meat Institute Foundation

Sources of Funding: No conflict

I am Dr. Betsy Booren, Vice President of Scientific Affairs for the American Meat Institute Foundation. The AMI Foundation appreciates this Committee's important role in developing nutritional recommendations that can translate into attainable and actionable nutritional policy that will measurably improve the health of Americans.

The Industry I represent produces more than 90 percent of U.S. beef, pork, veal and lamb products and 70 percent of U.S. turkey products. This includes fresh, whole-muscle meats as well as ready-to-eat products. These products provide Americans a simple, direct, and balanced dietary source of all essential amino acids and are rich sources of micronutrients such as iron, selenium, Vitamins A, B12, and folic acid. While a key trend in products today is added protein, our products are quite simply a natural, complete protein. A significant majority of Americans make meat and poultry products part of their diets and for good reason.

Per serving, meat, poultry, and fish provide more protein than dairy, eggs, legumes, or cereals, vegetables, or nuts. Protein is critical for developing, maintaining, and repairing strong muscles. And is vital for growth in children and reducing the muscle loss that often occurs with aging. The high-quality protein from meat and poultry is a "one-stop-shop" for the essential amino acids. Meat and poultry generally provide more protein per calorie than plant protein sources.

Foods from animals, including meat & poultry, are THE natural source of Vitamin B12, which is important for normal metabolism and mental clarity. Up to 16% of U.S. adults and more than 20% over 60 years old are marginally depleted in vitamin B12. Deficiency increases with age, with about 6% of those over 70 years old being deficient in vitamin B12.¹ Meat & poultry are rich in nutrients your body can use, and help people derive more nutrients from vegetables and grains when consumed in combination. Iron and zinc in beef, pork, lamb, poultry, and fish are more "bioavailable," meaning they are more easily absorbed and utilized by the body, than these minerals from grains or vegetables.

Given basic facts about the American lifestyle, cooking can be an obstacle to good nutrition, convenience meats can help encourage consumption of the complete protein that meat and poultry offer. The meat and poultry industry offers its customers a variety of convenience meat products, like marinated roasts, fully cooked home-style favorites like meatloaf or turkey breast

¹ Allen LH (2008). How common is vitamin B-12 deficiency? <http://ajcn.nutrition.org/content/89/2/693S.long>.

and luncheon meats in a variety of different formulations that fit their lifestyle and nutrition needs including low fat, low sodium, gluten free and more.

- It is important to note that these convenience meats have an exemplary safety record and are affordable products that can provide nutrition and more specifically protein to people on fixed incomes, who may also be in an at-risk food safety demographic and have limited ability to prepare food.
- We ask you to consider the important role of leaner, reduced sodium convenient meats in a diet, which provide nutritious options for foods consumed by millions. In particular, the importance of these foods for sub-groups of the population who have limited options and are currently making less nutrient dense choices. These populations may currently be at higher risk for deficiencies of key nutrients that convenient meat products provide.
- We agree that a variety of protein foods should be consumed. However we also have shown that convenience meats can fit into healthy eating pattern and is an appropriate option for a healthy lifestyle. The meat and poultry industry also provides a variety of processed meats that include historical American favorites as well as whole muscle items, and many lower sodium, and leaner options.

One final note – it is commonly thought that Americans are over-consuming meat and poultry. Federal data show that on average, Americans consume within the recommended range, with men at the higher end of the range and women at the low end of the range. It is essential that you consider this fact as you make your recommendations.

I thank you for your time and consideration. AMI Foundation looks forward to providing a more detailed written comments for your consideration.