



American Meat Science Association

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RE: Solicitation of Written Comments on the 2015 Dietary Guidelines Advisory Committee Report

To Whom It May Concern:

The American Meat Science Association (AMSA) is a section 501(c)(3) individual membership scientific professional society representing more than 2,000 scientists and students from the international academic and industry community. Our members discover and apply scientific principles to secure a sustainable supply of abundant, nutritious, high quality meat for the world's food supply.

Taking into account the full body of evidence, it is our conclusion that ***any dietary guidelines should include meat and poultry as part of a healthy diet and should not discourage consumption of meat and poultry, including red and processed meats.***

AMSA appreciates the agencies' important role in developing nutritional recommendations for Americans, as well as the time the Dietary Guidelines Advisory Committee (DGAC or the Committee) spent reviewing the scientific evidence on healthy dietary patterns. Our primary concern with the report is that the DGAC meat-related recommendations do not reflect the totality of evidence on meat's role in health. That this Committee's recommendations directly contradict the 2010 DGAC's Report and the *Dietary Guidelines for Americans, 2010* are also concerning. In 2010, the *Dietary Guidelines for Americans* (DGA), which is the federal nutritional policy, encouraged *increased*

consumption of lean meat and poultry. Since 2010, additional strong evidence has emerged that further supports this recommendation. The following studies are cited for your consideration:

Murphy K.J., Thomson R.L., Coates A.M., Buckley J.D., Howe P.R. Effects of eating fresh lean pork on cardiometabolic health parameters. *Nutrients*. 2012;4(7):711-723.

Roussel M.A., Hill A.M., Gaugler T.L., et al. Beef in an Optimal Lean Diet study: effects on lipids, lipoproteins, and apolipoproteins. *American Journal of Clinical Nutrition*. 2012;95(1):9-16.

Campbell W.W., Tang M. Protein intake, weight loss, and bone mineral density in postmenopausal women. *Journals of Gerontology. Series A, Biological Sciences and Medical Sciences*. 2010;65(10):1115-1122.

Murphy K.J., Parker B, Dyer K.A., et al. A comparison of regular consumption of fresh lean pork, beef and chicken on body composition: a randomized cross-over trial. *Nutrients*. 2014;6(2):682-696.

Negro M., Vandoni M., Ottobrini S., et al. Protein supplementation with low fat meat after resistance training: effects on body composition and strength. *Nutrients*. 2014;6(8):3040-3049.

Meat and Poultry including Red and Processed Meat, are Components of a Healthy Diet

The Advisory report concluded that, “The overall body of evidence examined by the 2015 DGAC identifies that a healthy dietary pattern is higher in vegetables, fruits, whole grains, low- or non-fat dairy, seafood, legumes, and nuts; moderate in alcohol (among adults); lower in red and processed meat;¹ and low in sugar sweetened foods and drinks and refined grains;” line 115 of the Executive Summary. Confusing the issue is the report’s footnote regarding “lean meats.” The statement and footnote contradict each other and run counter to numerous published studies and ongoing research that continue to show that meat and poultry play a vital role in a healthy diet.

There are three key concepts that underlie the importance of recommending meat and poultry in a healthy diet: nutrient density, metabolic function and current dietary patterns.

Meat and Poultry Products are Nutrient Dense Sources of High Quality Protein

Meat and poultry, including red and processed meat, are an important part of the diet because they are protein-rich foods that supply all nine of the essential amino acids needed for good health. The DGAC recommendation does not distinguish the superior amino acid quality of muscle foods, including red and processed meats. While there are a variety of plant-based protein sources, animal proteins provide more and higher quality protein than plant foods. Proteins, and the amino acids they are comprised of, are often called the building blocks of life. The body uses them during growth and development, and throughout life, to repair and maintain itself. Nutrient dense foods are naturally rich in vitamins, minerals, and other substances that may have positive health effects.

Meat and poultry provide other physiologically important nutrients that are absent in plant-source foods. Red meat is a natural and significant source of a number of B vitamins: thiamin, riboflavin, niacin, B₆ and B₁₂. Vitamin B₁₂ is not found naturally in foods of plant origin and is important for healthy red blood cells, growth and the production of energy. Meat and poultry, including red and processed meat, are an excellent source of iron, a

nutrient of concern specifically highlighted in line 55 of the Executive Summary by the DGAC especially for “adolescent females and adult females who are premenopausal due to the increased risk of iron-deficiency in these groups.” Iron in meat and poultry is easier to absorb than iron found in plants and the populations identified at risk of iron deficiency are the groups consuming the least amount of meat.²

Optimal Metabolic Function Achieved with Higher Protein

There is a growing body of evidence that indicates the American population could benefit from substituting a portion of their current refined carbohydrate intake with high quality, nutrient dense proteins like meat. While the USDA Food Patterns provide between 14-18 percent of calories in a 2000 calorie diet, there is a strong and consistent body of evidence that supports increasing protein intake to 20-25 percent of calories (concomitantly reducing the percent dietary refined carbohydrate). Very recently, the *American Journal of Clinical Nutrition* published the proceedings of Protein Summit 2.0 where evidence supporting the importance of optimal intakes of high-quality protein and timing of protein intake throughout the day to achieve and maintain a healthy body weight, improve metabolic function and support healthy aging is clearly outlined.^{3,4,5,6,7,8} Dietary patterns with optimal intakes of high quality protein, including meat, are recognized as important for supporting cardiovascular health, achieving and maintaining a healthy body weight and composition, and improving vitality and stamina. A sampling of the evidence in support of protein centric diets for health follows:

- Weight loss diets containing higher amounts of protein have been shown to be more effective compared to standard protein (higher carbohydrate) diets. “*The Role of Protein in Weight Loss and Maintenance*” support the benefits of higher protein, weight loss diets compared to similar lower protein diets.⁵ Specifically, higher protein (*i.e.*, 1.2 to 1.6g/kg/day), weight loss diets result in greater losses in body weight and body fat, preservation of lean body mass and reductions in triglycerides, blood pressure and waist circumference.⁵
- Eating a higher protein diet leads to higher energy expenditure through the oxidation of carbohydrates and fats and through the cost of metabolizing the protein itself. While the thermogenic effect is small and only accounts for a few percent of total daily calories, this mechanism is believed to contribute to a meaningful extent when a high protein diet is consumed over a long period of time.⁹
- A diet rich in high quality protein is gaining scientific support as a successful strategy to promote weight loss, prevent weight-regain (following weight loss), or to simply maintain a healthy body weight.¹⁰ One key factor in the effectiveness of higher protein diets includes the improvement in appetite control and satiety. Clinical evidence supporting the role of higher protein meals and/or diets to combat obesity and promote overall health across the lifespan.¹⁰
- High protein meals reduce the glycemic index for a given amount of carbohydrate; this reduces the “hyper” secretion of insulin and prevents insulin mediated fat deposition.⁹ High quality proteins promote muscle protein synthesis and protein blends may have additional benefits by stimulating muscle protein synthesis for

longer periods and offers ways to increase the relative protein to lipid content of product offerings.⁹

- Daily consumption of a protein-rich breakfast, containing 35 grams of high quality protein, leads to daily improvements in appetite control, satiety, and energy intake compared to a normal protein breakfast.¹⁰ Research has shown that the addition of a high protein breakfast led to daily reductions in perceived hunger and hunger-stimulating ghrelin concentrations along with increases in perceived fullness and plasma peptide YY responses compared to skipping breakfast as well as the normal protein breakfast.¹⁰ Additionally, the high protein breakfast led to reductions in evening snacking (*ca.* 200 kcal), particularly of foods high in fat compared to skipping breakfast or following the normal protein breakfast. These data suggest that the daily addition of a high protein breakfast improves appetite control, satiety, and reduces over-eating in the evening.¹⁰

Collectively, research shows healthy dietary patterns with a higher percent of calories from protein, including meat protein, than currently recommended in the USDA Food Patterns are associated with positive health outcomes including cardiovascular health, achieving and maintaining a healthy body weight and composition, and improving vitality and stamina.¹¹

Current Meat Consumption Trends Indicate Moderate to Low Intake of Meat

Americans are eating red meat in moderation, at levels that are consistent with the *Dietary Guidelines for Americans, 2010*. Unlike other foods, lean meat is not being over-consumed, on average. The daily-recommended amount of protein for individuals 9 and older, depending on age and gender, is between 5 and 6 ½ ounces.¹² *What We Eat in America* data reports current consumption of meat and poultry intake by individuals 2 and over in the U.S. at 1.52 ounces per day, or 10.64 ounces per week for meat; 1.44 ounces per day, or 10.08 per week for poultry and 1.04 ounces per day, or 7.28 ounces per week for cured meat products.¹³ While total meat consumption among some age groups may exceed the recommended Food Patterns, evidence would suggest that the current intake of meat and poultry is less than recommended. These data support advice encouraging Americans to choose meat and poultry more often as part of healthy dietary pattern.

The meat supply has become leaner over time, in direct response to previous DGAs. For example, since the first edition of the *Dietary Guidelines for Americans* in 1980, external fat on retail beef cuts has decreased by 81 percent. Today, 17 of the 25 most popular beef cuts meet USDA definition for lean meat.¹⁴ At least seven of the popular cuts of pork meet USDA definition for lean as well many further processed meat and poultry products. There are numerous updated nutrient data tools to enable consumers and health professionals to confidently identify the best meat choices to meet nutritional needs.

Next Steps

AMSA encourages the following:

1. Considerable scrutiny of the strength of the scientific evidence the Committee used for its report specifically related to meat.

2. Comprehensive reevaluation of the evidence on the role of meat and poultry in healthy dietary patterns.

The DGA should provide the necessary information and guidance to help Americans make better choices by including meat and poultry as part of a healthy diet. The DGA meat-related advice should not be misleading, contradictory or confusing for Americans. This can be achieved by offering specific advice to choose lean meat and poultry, including red and processed meat, more often within calorie needs as recommended by the 2010 DGA.

As the agencies thoroughly review the full body of knowledge regarding the role of meat and poultry in a healthy diet, please feel free to reach out to AMSA. As an individual membership scientific professional society representing more than 2,000 scientists we can provide scientists to assist and support you in the review process.

Conclusion

The *2015 Dietary Guidelines for Americans* should include lean meat and poultry as part of healthy American diet. 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 2015 DGA should not discourage the consumption of red meat and processed products. In addition, scientific evidence should be the foundation of nutrition policy. Consistent and uniform application of rigorous scientific review methodology, *e.g.*, the Nutrition Evidence Library, should guide the recommendations and policies.

AMSA appreciates the opportunity to provide these comments. Our membership 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. If you have questions about any aspect of these comments or would like to discuss them, please contact us at dmabry@meatscience.org or tpowell@meatscience.org. We have listed all of our reference online at www.meatscience.org.

Respectfully submitted,



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Footnotes

¹Dietary Guidelines Advisory Committee. (2015). Scientific Report of the 2015 Dietary Guidelines Advisory Committee. Pg. 4. Footnote: As lean meats were not consistently defined or handled similarly between studies, they were not identified as a common characteristic across the reviews. However, as demonstrated in the food pattern modeling of the Healthy U.S.-style and Healthy Mediterranean-style patterns, lean meats can be a part of a healthy dietary pattern.

²Iron and Iron Deficiency. Centers for Disease Control and Prevention. Centers for Disease Control and Prevention, 23 Feb. 2011. Web

³Nancy R Rodriguez. Introduction to Protein Summit 2.0: continued exploration of the impact of high-quality protein on optimal health. *American Journal of Clinical Nutrition* ajcn083980; First published online April 29, 2015. doi:10.3945/ajcn.114.083980.

PDF: <http://ajcn.nutrition.org/content/early/2015/04/29/ajcn.114.083980.full.pdf>

⁴Donald K Layman, Tracy G Anthony, Blake B Rasmussen, Sean H Adams, Christopher J Lynch, Grant D Brinkworth, and Teresa A Davis. Defining meal requirements for protein to optimize metabolic roles of amino acids. *American Journal of Clinical Nutrition*. ajcn084053; First published online April 29, 2015. doi:10.3945/ajcn.114.084053

Abstract: <http://ajcn.nutrition.org/content/early/2015/04/29/ajcn.114.084053.abstract>

PDF: <http://ajcn.nutrition.org/content/early/2015/04/29/ajcn.114.084053.full.pdf>

⁵Heather J Leidy, Peter M Clifton, Arne Astrup, Thomas P Wycherley, Margriet S Westerterp-Plantenga, Natalie D Luscombe-Marsh, Stephen C Woods, and Richard D Mattes. (2015). The role of protein in weight loss and maintenance. *American Journal of Clinical Nutrition*. ajcn084038; First published online April 29, 2015. doi:10.3945/ajcn.114.084038.

Abstract: <http://ajcn.nutrition.org/content/early/2015/04/29/ajcn.114.084038.abstract>

PDF: <http://ajcn.nutrition.org/content/early/2015/04/29/ajcn.114.084038.full.pdf>

⁶Stuart M Phillips, Victor L Fulgoni III, Robert P Heaney, Theresa A Nicklas, Joanne L Slavin, and Connie M Weaver. Commonly consumed protein foods contribute to nutrient intake, diet quality, and nutrient adequacy. *American Journal of Clinical Nutrition* ajcn084079; First published online April 29, 2015. doi:10.3945/ajcn.114.084079

Abstract: <http://ajcn.nutrition.org/content/early/2015/04/29/ajcn.114.084079.abstract>

PDF: <http://ajcn.nutrition.org/content/early/2015/04/29/ajcn.114.084079.full.pdf>

⁷Douglas Paddon-Jones, Wayne W Campbell, Paul F Jacques, Stephen B Kritchevsky, Lynn L Moore, Nancy R Rodriguez, and Luc JC van Loon. Protein and healthy aging. *American Journal of Clinical Nutrition* ajcn084061; First published online April 29, 2015. doi:10.3945/ajcn.114.084061

Abstract: <http://ajcn.nutrition.org/content/early/2015/04/29/ajcn.114.084061.abstract>

PDF: <http://ajcn.nutrition.org/content/early/2015/04/29/ajcn.114.084061.full.pdf>

⁸Nancy R Rodriguez and Sharon L Miller. Effective translation of current dietary guidance: understanding and communicating the concepts of minimal and optimal levels of dietary protein. *American Journal of Clinical Nutrition* ajcn084095; First published online April 29, 2015. doi:10.3945/ajcn.114.084095

Abstract: <http://ajcn.nutrition.org/content/early/2015/04/29/ajcn.114.084095.abstract>

PDF: <http://ajcn.nutrition.org/content/early/2015/04/29/ajcn.114.084095.full.pdf>

⁹Krul, E.S. (2012). The Role of Protein in Weight Management: A Biochemist's Perspective. *American Meat Science Association 65th Reciprocal Meat Conference Proceedings*. Pg. 3-7

PDF: <http://www.meatscience.org/docs/default-source/publications-resources/diet-and-health/amsa-65-rmc-elaine-s-krul.pdf?sfvrsn=2>

¹⁰Leidy, H.J. (2012). Evidence Supporting a Diet Rich in Protein to Improve Appetite Control, Satiety, and Weight Management across the Lifespan. *American Meat Science Association 65th Reciprocal Meat Conference Proceedings*. Pg. 8-12

PDF: <http://www.meatscience.org/docs/default-source/publications-resources/diet-and-health/amsa-65-rmc-heather-j-leidy.pdf?sfvrsn=2>

¹¹McNeill, S. H. (2014). Inclusion of Red Meat in Healthful Dietary Patterns. *Meat Science*. (98): 452-460.

¹²<http://www.choosemyplate.gov/food-groups/protein-foods.html#>. Accessed May 5, 2015.

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¹³What We Eat in America, NHANES 2009-2010, individuals 2 years and over (excluding breast-fed children), day 1 dietary intake data, weighted. Food Patterns Equivalents Database (FPED) 2009-2010. Available at: http://www.ars.usda.gov/SP2UserFiles/Place/80400530/pdf/fped/Table_1_FPED_GEN_0910.pdf

¹⁴U.S. Department of Agriculture (2007). *A Guide to Federal Food Labeling Requirements for Meat, Poultry and Egg Products*. Footnote: Pg. 97. Lean may be used to describe an individual food items when it contains less than 10 grams of total fat, 4.5 grams or less of saturated fat, and less than 95 milligrams of cholesterol per reference amount and per 100 grams.