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Comment on FR Doc # 2019-04543

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Comment

RE: Beef is a foundational food that nourishes and optimizes Americans health at every life stage.

The Beef Checkoff appreciates the opportunity to provide evidence for consideration on the development of the 2020-2025 Dietary Guidelines for Americans (DGA). The Beef Checkoff is a producer-funded marketing and research program, which includes a significant commitment to supporting nutrition research to better understand beef's role in healthy diets. As outlined below and detailed in the attached evidence overview, beef is a foundational food that nourishes and optimizes Americans health at every life stage.

Given the unique needs of individuals throughout life, we appreciate the focus on each life stage, including early childhood, prenatal/childbearing years, adulthood, and older adulthood. With high-quality protein, iron, zinc, choline and B vitamins, beef is a nutrient-rich food that helps Americans: avoid nutrient shortfalls across the life span; support healthy pregnancies; grow and develop throughout childhood; maintain strength and energy into adulthood; and age vibrantly.

In fact, many Americans would benefit from getting more nutrients like protein, iron and choline, which are easily found in beef. For example, most people eat enough protein to meet the Recommended Dietary Allowance (RDA), an amount set to meet the body's minimum requirements to prevent deficiency. However, the Acceptable Macronutrient Distribution Range (AMDR) for protein is the range of intake associated with reduced risk of chronic disease while providing intakes of essential nutrients. Evidence suggests that protein intake higher than the RDA, but within the AMDR, may help maintain normal muscle mass with age, the loss of which is associated with risk of sarcopenia, and help achieve and maintain a healthy weight. Beef is an excellent source of high-quality protein. And, while Americans waistlines are expanding, consumption of calories and fat from beef have declined. Today's beef consumption contributes about 15 percent of the protein, along with more than 5 percent of seven other essential nutrients, and only five percent of total calories in Americans' diets.

During pregnancy and the first 24 months of life, beef provides key nutrients that support a healthy pregnancy and infants' neurocognitive development. The American Medical Association and American Academy of Pediatrics (AAP) have reaffirmed choline's importance during pregnancy and lactation. Women are twice as likely to be iron-deficient as men, and iron deficiency anemia during pregnancy increases risk of preterm and low birthweight babies. Beef is a top source of both iron and choline in the diets of American adults. Research continues to show beef is a nutrient-rich first food for infants. According to the AAP, key nutrients that support neurocognitive development during pregnancy and the first 2 years of life include protein, zinc, iron, vitamins B6 and B12, and choline, which are abundant in beef.

Beyond the benefits of its nutrients, beef can be the protein food enjoyed in heart-healthy diets, such as DASH and the Mediterranean-style pattern, according to research from randomized controlled trials. In fact, over 20 studies have demonstrated that healthy dietary patterns with beef can contribute to favorable changes in heart health risk factors and other positive health outcomes.

Beef is one of Americans' top protein choices. Contrary to common misperceptions, beef is leaner than ever before, and Americans eat beef within the current DGA recommendations [on average about 1.5 ounces-equivalent beef (fresh lean and cured) daily]. Research has shown that dietary guidance is most effective in changing behaviors when it considers food and lifestyle preferences, cultural and social beliefs, and existing habits. At a time when Americans need to eat more fruits and vegetables, a favorite food like beef can help people balance their diets and complement the nutrients in plant foods.

As the Committee embarks on this scientific review, it's important that science-based dietary guidance will rely on systematically reviewing the totality of evidence for the nutrition questions at hand, using best practice methods that are thorough, transparent, objective, relevant, and timely. It has been previously demonstrated that observational methods are limited in their ability to discern individual food recommendations, which are widely used in dietary guidance. For relevant questions, data from well-designed randomized controlled trials, where beef is included in healthy diets, can balance these challenges.

As part of most Americans' diets, traditions, and celebrations, beef is a foundational food that nourishes and optimizes health at every life stage. Thank you for the opportunity to share the attached evidence overview for consideration as the Committee examines Topics and Questions that are relevant to evaluating the role of beef in healthy diets.

Attachments (1)

[Beef_as_a_foundational_food_FINAL](#)

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Food industry

May 21, 2019

Barbara Schneeman, PhD
Chair, 2020-2025 Dietary Guidelines Advisory Committee

Ron Kleinman, MD
Vice-Chair, 2020-2025 Dietary Guidelines Advisory Committee

CC: 2020-2025 Dietary Guidelines Advisory Committee Members
U.S. Department of Agriculture
U.S. Department of Health and Human Services
Brandon Lipps, Acting Deputy Undersecretary for Food and Nutrition Consumer Services

RE: Beef is a foundational food that nourishes and optimizes Americans' health at every life stage.

Dear Members of the Dietary Guidelines Advisory Committee:

The Beef Checkoff appreciates the opportunity to provide evidence for consideration on the development of the *2020-2025 Dietary Guidelines for Americans* (DGA). The Beef Checkoff is a producer-funded marketing and research program, which includes a significant commitment to supporting nutrition research to better understand beef's role in healthy diets. As outlined below and detailed in the attached evidence overview, beef is a foundational food that nourishes and optimizes Americans' health at every life stage.¹

Given the unique needs of individuals throughout life, we appreciate the focus on each life stage, including early childhood, prenatal/childbearing years, adulthood, and older adulthood. With high-quality protein, iron, zinc, choline and B vitamins, beef is a nutrient-rich food that helps Americans: avoid nutrient shortfalls across the life span; support healthy pregnancies; grow and develop throughout childhood; maintain strength and energy into adulthood; and age vibrantly.²⁻²²

In fact, many Americans would benefit from getting more nutrients like protein, iron and choline, which are easily found in beef.^{2,8,27,51} For example, most people eat enough protein to meet the Recommended Dietary Allowance (RDA), an amount set to meet the body's minimum requirements to prevent deficiency. However, the Acceptable Macronutrient Distribution Range (AMDR) for protein is the range of intake associated with reduced risk of chronic disease while providing intakes of essential nutrients.⁴³⁻⁴⁸ Evidence suggests that protein intake higher than the RDA, but within the AMDR, may help maintain normal muscle mass with age, the loss of which is associated with risk of sarcopenia, and help achieve and maintain a healthy weight.^{25,29,45} Beef is an excellent source of high-quality protein.^{2,28} And, while Americans' waistlines are expanding, consumption of calories and fat from beef have declined.⁶⁰ Today's beef consumption contributes about 15 percent of the protein, along with more than 5 percent of seven other essential nutrients, and only five percent of total calories in Americans' diets.²⁷

During pregnancy and the first 24 months of life, beef provides key nutrients that support a healthy pregnancy and infants' neurocognitive development.^{9,13,14,52} The American Medical Association and American Academy of Pediatrics (AAP) have reaffirmed choline's importance during pregnancy and lactation.⁹ Women are twice as likely to be iron-deficient as men, and iron deficiency anemia during pregnancy increases risk of preterm and low birthweight babies.⁵⁰ Beef is a top source of both iron and choline in the diets of American adults.^{8,32} Research continues to show beef is a nutrient-rich first food for infants.^{9,14} According to the AAP, key nutrients that support neurocognitive development during pregnancy and the first 2 years of life include protein, zinc, iron, vitamins B6 and B12, and choline, which are abundant in beef.^{2,9,14}

Beyond the benefits of its nutrients, beef can be the protein food enjoyed in heart-healthy diets, such as DASH and the Mediterranean-style pattern, according to research from randomized controlled trials.⁵⁶⁻⁵⁸ In fact, over 20 studies have demonstrated that healthy dietary patterns with beef can contribute to favorable changes in heart health risk factors and other positive health outcomes.⁴¹

Beef is one of Americans' top protein choices.^{65,66} Contrary to common misperceptions, beef is leaner than ever before, and Americans eat beef within the current DGA recommendations [on average about 1.5 ounces-equivalent beef (fresh lean and cured) daily].^{51,60,64} Research has shown that dietary guidance is most effective in changing behaviors when it considers food and lifestyle preferences, cultural and social beliefs, and existing habits.^{69,70} At a time when Americans need to eat more fruits and vegetables, a favorite food like beef can help people balance their diets and complement the nutrients in plant foods.⁷²

As the Committee embarks on this scientific review, it's important that science-based dietary guidance will rely on systematically reviewing the totality of evidence for the nutrition questions at hand, using best practice methods that are thorough, transparent, objective, relevant, and timely.⁷⁴⁻⁷⁹ It has been previously demonstrated that observational methods are limited in their ability to discern individual food recommendations, which are widely used in dietary guidance.^{51,80,81} For relevant questions, data from well-designed randomized controlled trials, where beef is included in healthy diets, can balance these challenges.^{84,87,88}

As part of most Americans' diets, traditions, and celebrations,⁶³ beef is a foundational food that nourishes and optimizes health at every life stage.¹ Thank you for the opportunity to share the following evidence overview for consideration as the Committee examines Topics and Questions that are relevant to evaluating the role of beef in healthy diets.



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Evidence Overview and Supporting Citations

Beef is a foundational food that nourishes and optimizes Americans' health at every life stage.¹

- **With a unique combination of high-quality protein, iron, zinc, choline and B vitamins,² beef is a nutrient-rich food that helps Americans: avoid nutrient shortfalls across the life span;^{3,4,5} support healthy pregnancies;^{6,7,8} grow and develop throughout childhood;^{8,9,10,11,12,13,14,15,16,17} maintain strength, energy and vitality into adulthood; and age vibrantly and independently.^{9,18,19,20,21,22}**
 - Protein, iron, zinc, choline, and B-vitamins help ensure young children start life strong, building healthy bodies and brains.^{8,9,10,11,12,13,14,15,16}
 - Beef is a source for essential nutrients required for growth, development and overall wellbeing.^{2,5,8,9,10,11,12,13,14,18,21,22,23,24,25,26}
 - Protein is especially important as we age. After 50 years of age, adults are at risk for losing muscle mass, leading to falls and frailty that affect their ability to age independently.^{23,24,25,26} Beef is an excellent source of high-quality protein.²
- **No other protein food delivers the same nutrient-rich package as beef in about 170 calories, on average, per three-oz serving of cooked beef.²**
 - **Beef contributes approximately five percent of total calories to Americans' diets while providing more than five percent of eight essential nutrients:** potassium (6.1%), phosphorus (7.3%), iron (8%), vitamin B6 (9.2%), niacin (9.9%), protein (15.2%), zinc (23.1%), and vitamin B12 (25%).²⁷
 - **Beef is an excellent source of protein;** a three-oz serving of cooked beef provides about 51% of the daily value for protein.^{2,28} Beef delivers high-quality protein needed to achieve and maintain a healthy weight, preserve and build muscle and support healthy aging.^{2,19,15,20,21,22,24,25,26,29,30,31}
 - **Beef is a top food source of iron** among U.S. adults.³² Iron is an essential nutrient for both the function and growth of your body.^{33,34}
 - **Beef is a top food source of zinc** among U.S. adults.³² In addition to supporting a healthy immune system, zinc is an important mineral needed for proper growth and to strengthen communications between neurons in the brain.^{35,36,37}
 - **Beef is a major contributor of choline** to the American diet.^{8,38,39} New and emerging evidence suggests that maternal choline intake during pregnancy, and possibly lactation, has lasting beneficial neurocognitive effects on the offspring.⁸ High choline intake during the perinatal period has been demonstrated to have a lasting neuroprotective effect.^{8,40}
- **High-quality scientific evidence demonstrates that beef, at current levels consumed, offsets nutrient deficiencies and serves as an integral part of healthy diets.^{3,27,41,42}** In fact, many Americans would benefit from getting more nutrients like protein, iron and choline, which are easily found in wholesome, high-quality beef.^{2,3,27}
 - Most people eat enough protein to meet the body's minimum requirements to prevent deficiency, but **few Americans consume what many scientists agree is the optimal amount of protein needed for good health.**^{43,44,45,46,47,48} According to the Institute of Medicine (now the Health and Medicine Division of the National Academies of Sciences, Engineering and Medicine/NASEM) report on Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein and Amino Acids, the Acceptable Macronutrient Distribution Range (AMDR) is "the range of intake for a particular energy source [including protein] that is associated with reduced risk of chronic disease while providing intakes of essential nutrients."⁴⁹
 - The AMDR for protein (10–35% of calories as protein) was developed to express dietary recommendations in the context of a complete diet while reducing risk of chronic disease

- and providing sufficient intakes of essential nutrients.^{45,47,49} **The lowest level of protein intake reflected in the AMDR is higher than that of the RDA.**⁴⁹
- **Women are twice as likely to be iron-deficient than men. More than 5.5% of the U.S. population has iron-deficiency anemia.**⁵⁰
 - According to the *2015-2020 Dietary Guidelines for Americans*: “Substantial numbers of women who are capable of becoming pregnant, including adolescent girls, are at risk of iron-deficiency anemia due to low intakes of iron,”⁵¹ and “To improve iron status, women and adolescent girls should consume foods containing heme iron, such as lean meats, poultry, and seafood, which is more readily absorbed by the body.”⁵¹
 - Iron deficiency anemia during pregnancy increases risk of preterm and low birthweight babies.⁵¹
 - **The American Medical Association and American Academy of Pediatrics have both recently reaffirmed choline’s importance during pregnancy and lactation.**⁹
 - **Beef provides many key nutrients critical for neurocognitive development early in life, as well as for supporting cognitive health as people age, including iron, zinc, choline, and vitamins B6 and B12.**^{8,9,13,14,52,53}
 - According to the American Academy of Pediatrics:
 - Although all nutrients are necessary for brain growth, key nutrients that support neurodevelopment include protein; zinc; iron; choline; folate; iodine; vitamins A, D, B6, and B12; and long-chain polyunsaturated fatty acids. Failure to provide key nutrients during this critical period of brain development may result in lifelong deficits in brain function despite subsequent nutrient repletion.¹⁴
 - Prenatal and early infancy iron deficiency is associated with long term neurobehavioral damage that may not be reversible, even with iron treatment.¹⁴
 - According to the National Institute on Aging:
 - A healthy diet consisting of fruits and vegetables; whole grains; lean meats, fish, and poultry; and low-fat or non-fat dairy products, can help reduce the risk of many chronic diseases, such as heart disease or diabetes, and may also help keep the brain healthy.⁵⁴
 - According to the Linus Pauling Institute Micronutrient Information Center (at Oregon State University):
 - Deficiencies in various micronutrients, especially the B vitamins, have adverse effects on cognition.⁵⁵
 - Adequate dietary intake of B vitamins, antioxidant vitamins, essential minerals, and omega-3 fatty acids may help protect against the cognitive decline associated with normal aging.⁵⁵
 - **Research from randomized controlled trials continues to demonstrate that lean beef can be the predominant protein source in DASH (Dietary Approaches to Stop Hypertension),^{56,57} Mediterranean⁵⁸ and fruit and vegetable rich eating patterns.⁵⁹ In fact, over 20 studies have demonstrated that healthy dietary patterns including beef can contribute to favorable changes in heart health risk factors and other positive health outcomes.**⁴¹
 - **Beef is leaner than ever before, making it even easier for Americans to include lean beef in a variety of healthy diets.**⁶⁰ Today’s leaner beef supply is the result of determined efforts by the beef industry to produce meat that is consistent with U.S. government issued dietary guidance, beginning with the 1977 Dietary Goals for the United States, to limit U.S. intake of total fat, saturated fat, and cholesterol through changes in breeding, feeding and trimming practices.⁶⁰

- Today, **more than 65% of beef cuts sold at retail meet government standards for lean**, and 17 of the top 25 most popular cuts sold at retail are lean. Retail data shows that sales of 90%-95% lean ground beef increased by 39% between 2008 and 2018.⁶¹
- The Beef in an Optimal Lean Diet (BOLD) Study, published in *American Journal of Clinical Nutrition*, was designed by researchers at Pennsylvania State University to evaluate a DASH-style dietary pattern with varying levels of lean beef in healthy people.⁵⁶
 - **People who participated in the BOLD Study, maintained healthy blood cholesterol levels (total and LDL) while consuming a dietary pattern rich in vegetables, fruits, whole grains, nuts and beans, with lean beef as the primary protein source.**⁵⁶
 - The BOLD diets contained **4-5.4 oz (weights before cooking) of lean beef daily, while providing less than 7% of calories from saturated fat**, consistent with current fat intake targets.^{51,56}
- Previous research published in the *Journal of Human Hypertension* demonstrates that **lean beef can be enjoyed as the primary protein source in a DASH-like diet, along with fruits, vegetables and low-fat dairy, to effectively maintain normal blood pressure in healthy individuals.**⁵⁷
- According to new research published in *American Journal of Clinical Nutrition*, **following a Mediterranean-style eating pattern that incorporates lean, unprocessed red meat can support heart health.**⁵⁸
 - The study demonstrated that following a Mediterranean-style eating pattern **including 18 ounces of cooked, lean, unprocessed red meat per week, the typical amount consumed by U.S. residents, can positively impact cardiometabolic disease risk factor profiles.**⁵⁸
- **The current overweight/obesity epidemic demands that every calorie count.** For example, it's challenging to build nutrient-dense, low-calorie diets when limiting lean meat intake.⁴
 - Importantly, animal-based proteins such as meats contribute more protein and several nutrients (e.g. zinc, B12, phosphorus, and iron) than do plant-based protein sources while plant-based proteins can contribute more of other nutrients.⁵⁹
 - A three-ounce serving of cooked beef delivers about 25 grams of high-quality protein, which is essential for building and maintaining strength, for both your mind and body.^{2,12,13,62}
 - To get the same amount of protein (25 grams) available in a three-ounce serving of cooked beef, which provides about 170 calories, you would need to eat three cups, or 666 calories, of quinoa (the Reference Amount Customarily Consumed of quinoa is 140g, about ¾ cup of quinoa).²

People have enjoyed beef for centuries,⁶³ and today, Americans eat beef within the current *Dietary Guidelines for Americans* recommendations.^{51,64}

- **Americans are, on average, consuming total meat (including red meat), poultry and seafood at levels consistent with the 2015 Dietary Guidelines, at approximately 4.6 ounces per day.**^{51,64}
 - The 2015 Dietary Guidelines recommend 5.5 ounce-equivalents of protein foods daily (in the Healthy U.S.-Style Eating Pattern at the 2,000-Calorie Level).⁵¹

- **Americans are, on average, consuming fresh (lean) red meat at levels consistent with the 2015 Dietary Guidelines.**^{51,64}
 - According to the Dietary Guidelines, Americans on average consume about 1.5 ounces-equivalent fresh lean red meat (beef and pork) daily.^{51,64}
 - According to the Dietary Guidelines, Americans on average consume about 1.5 ounces-equivalent beef (fresh lean and cured) daily.^{51,64}

- **Today, more Americans cite beef as one of their top protein choices, with 88% identifying beef as a great source of protein.**^{65,66} There is an opportunity to improve diets through meals where beef intake balances the plate with other nutrient-rich foods such as vegetables,^{37,67} which are underconsumed.^{42,56}
 - Pairing produce and other whole foods with a family favorite like nutrient-packed lean beef helps people meet the Dietary Guidelines and MyPlate recommendations.^{51,68}
 - Research has shown that dietary guidance is most effective in changing behaviors when it considers Americans' food and lifestyle preferences, cultural and social beliefs, and existing habits.^{69,70}
 - In fact, the Scientific Report of the 2015 Dietary Guidelines Advisory Committee states “for long-term maintenance, **a dietary pattern to support optimal nutrition and health should be based on the biological and medical needs as well as preferences of the individual.**”⁷¹
 - **Nutrient-rich beef's high-quality protein, iron, and zinc strengthen a balanced diet and complement the nutrients found in plant foods.**⁷² According to the *2015-2020 Dietary Guidelines for Americans*, most people would benefit from more whole grains, vegetables, and fruits in their diets.⁵¹
 - Pairing fruits and vegetables with favorite foods like beef can help make it easier for Americans to enjoy more produce in a balanced diet. Once people have anchored their plate with protein, the next step is to fill at least half of the plate with colorful vegetables and fruits.⁶⁸
 - **Beef's nutrients enhance absorption of those nutrients found in plant foods.** For example, beef is one of the best sources of heme iron, which is more easily absorbed in the body, and can help absorb non-heme iron found in plant foods like spinach.^{33,73}

Science-based dietary guidance relies on systematically reviewing the totality of evidence for the nutrition questions at hand, using best practice methods that are thorough, transparent, objective, relevant, and timely.^{74,75,76,77,78,79}

- In the case of beef's role in health, **observational research has been limited and confounded by inconsistent meat terminology and the classification of meat in heterogeneous food categories in national food surveys.**^{51,80,81}
 - Regarding the challenge of food-based evidence evaluation, the National Academies of Sciences, Engineering and Medicine (NASEM) Committee notes, "Because methods for acquiring dietary intake data vary and have the potential to introduce bias into the systematic review outcomes, they should be taken into account in the development of inclusion/exclusion criteria and appropriately managed in analyses whenever possible".⁷⁴
 - For example, subjective naming strategies include the classification of individual foods into groups such as "sandwiches, mixed dishes and snacks."⁸¹
- Furthermore, **observational dietary pattern methods provide only a fraction of the evidence, often using subjective labels that generalize and bias food categories (i.e., Southern dietary pattern), and lack the discernment needed to make individual food recommendations.**^{82,83,84,85,86}
 - Dietary pattern assessments lack standardized methods to identify patterns and has been reported to be misleading, which may contribute to confusion and/or erroneous assumptions.^{83,84,85}
 - A simplified name to label a dietary pattern, such as "Western", "Traditional", "Southern", "Prudent", "Healthy", or "Sweets" does not necessarily capture the full range of foods in the dietary pattern.^{82,83,84,85,86}
 - A recent analysis concluded that "the input variables identified in the dietary pattern label may end up being given disproportionate attention when readers interpret results based on that factor," and "thus one must proceed with caution when interpreting the use of common pattern names, such as Western or prudent".⁸⁵
- **Randomized controlled trials, where meat types and intakes are independently evaluated and more clearly defined, provide less biased evidence, and are both foundational and complementary to inform recommendations on individual food groups such as meat.**^{84,87,88}
 - For example, observational dietary pattern research often describes "unhealthy" dietary patterns as high in saturated fat, sugar and sodium, and high in red meat. Few analyze "healthy" diets that are low in these nutrients and higher in red meat consumption.⁸⁴
 - Randomized controlled trials are able to examine such dietary patterns, are at lower risk of bias, and can confirm disease observations using controlled diets and markers of disease.⁸⁴

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