

Beef & Health

A Fresh Look At Today's Beef



Beef Satisfies a Healthy Lifestyle

For nearly 100 years, farmers and ranchers have supported nutrition research to advance the understanding of beef's role in a balanced diet. Farmers and ranchers are committed to providing a wholesome, nutritious food to Americans – and communicating science-based information about the role of beef in a healthful diet.

Overwhelming scientific evidence shows that dietary balance, variety and moderation, coupled with physical activity, provide the foundation for a healthful lifestyle. In fact, the *2015 Dietary Guidelines for Americans* highlight lean meat as a nutrient-dense food that can help people meet nutrient needs within their calorie goals, as part of an overall healthful eating pattern.¹

The checkoff's research program has illustrated that beef delivers an important array of nutrients, including protein, iron and B vitamins, which are essential to good health. And, research shows that beef's high-quality protein and nutrients make good diets even better – improving overall nutrient intake and diet quality while contributing to positive health outcomes.²⁻⁷ Scientific evidence also continues to illustrate the critical role that high-quality protein, like lean beef, in a heart-healthy diet can play in muscle maintenance, weight management and prevention of diseases, such as type 2 diabetes, cardiovascular disease and sarcopenia.⁸⁻¹¹

The latest evidence continues to support beef's role throughout the

lifespan, from beef as a source of easily absorbable zinc and iron for infants through its important contributions of high-quality protein, vitamin B₁₂ and zinc to aid in healthy aging.¹¹⁻¹³

As one of Americans' favorite proteins, beef can help build a nutrient-dense and better-tasting plate balanced with colorful fruits, vegetables and whole grains. Beef farmers and ranchers are dedicated to helping Americans enjoy today's leaner beef in a variety of balanced dietary patterns – and to working with researchers to contribute high-quality science that advances our understanding of the role beef plays in improving and satisfying healthful lifestyles.



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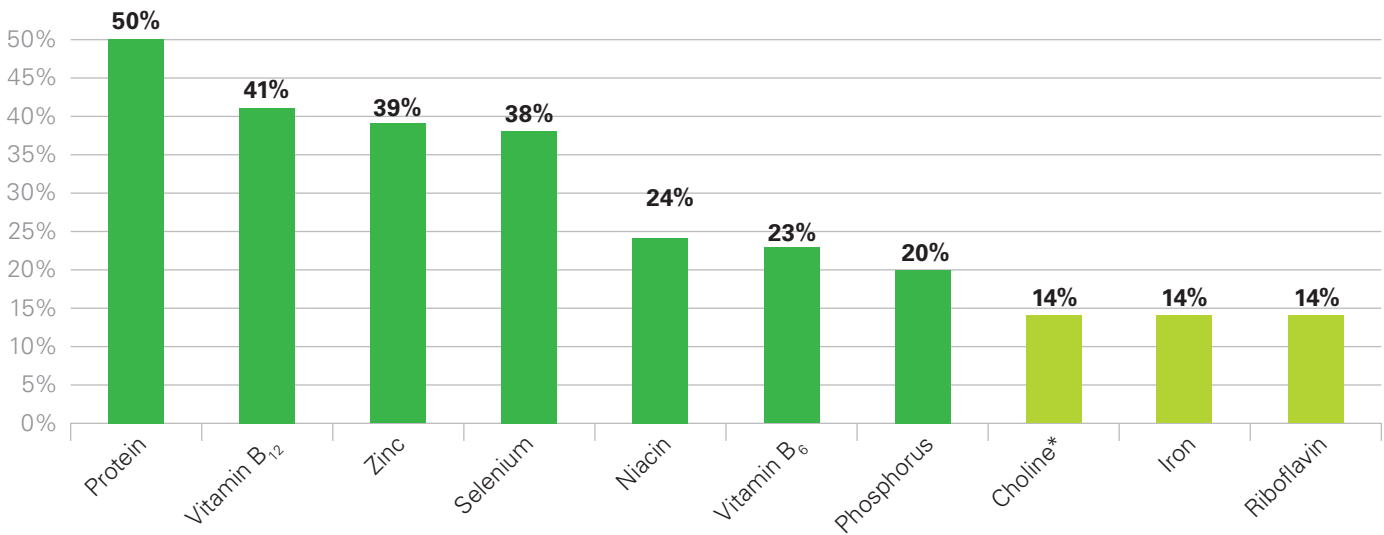
Beef's Nutrient Density Counts

At a time when calories really matter, beef offers a nutrient-dense solution for satisfying appetites while providing more nutrients in fewer calories than many other foods.

- A 3-ounce serving of beef contributes 8% of calories (169 calories) in a 2,000-calorie diet, yet provides between 10 and 50% of the Daily Value for 10 essential nutrients – protein, iron, zinc, vitamin B₆, vitamin B₁₂, niacin, riboflavin, choline, selenium and phosphorus.¹⁴
- U.S. dietary survey data indicate beef is one of the top sources of protein, vitamin B₁₂, zinc, selenium, iron and monounsaturated fatty acids in the American diet.^{14,15}
- Beef consumption significantly contributes to the intake of protein, vitamins B₆ and B₁₂, zinc, iron, niacin, phosphorus and potassium for all age groups, with a contribution of only 5% of total calories, less than 9% of total fat intake and less than 1% of sodium intake.^{16,17}



A 3-ounce serving of beef (169 calories) contributes less than 10% of calories in a 2,000-calorie diet, yet it supplies more than 10% of the Daily Value for:



- Meets U.S. Dept. of Agriculture (USDA) definition for “excellent” source of these nutrients, providing 20% or more of the Daily Value.
- Meets USDA definition for “good” source of these nutrients, providing 10-19% of the Daily Value.

* A 3-ounce serving of beef provides 14% of the highest Adequate Intake for Choline.

Source: US Department of Agriculture, Agricultural Research Service, Nutrient Data Laboratory. USDA National Nutrient Database for Standard Reference, Release 28, 2015. Available at <http://www.ars.usda.gov/nea/bhnrc/ndl>. Based on cooked servings, visible fat trimmed. FreshLook/IRI, 52 weeks ending 12/27/15, Total U.S. Cuts; categorized by VMMeats System.

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Today's Leaner Beef Supply

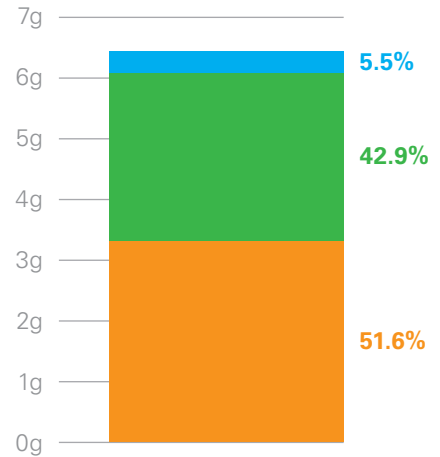
While Americans' waistlines are expanding, the consumption of calories and fat from beef has declined. Thanks to extensive industry efforts, beef is leaner than ever before. A reduced fat content and increased availability of lean beef make it even easier for people to enjoy beef as part of a healthful diet and lifestyle.

- There are now at least 37 cuts of beef that meet government guidelines for lean when cooked and visible fat trimmed. The U.S. Dept. of Agriculture (USDA) defines "lean" as having less than 10g of total fat, 4.5g or less of saturated fat and less than 95mg of cholesterol per 3.5-ounce cooked serving.¹⁴⁻¹⁸
- More than two-thirds of U.S. fresh whole muscle beef cuts, including 17 of the top 25 most popular currently sold at retail, meet USDA guidelines for lean.¹⁹
- You may be surprised to learn that 10 percent or less of saturated fat and total fat in the American diet comes from beef.¹⁶
- Interestingly, beef is considered one of the top sources of monounsaturated fat.¹⁵
- Retail data show that sales of 90% and higher lean ground beef has increased 22% since 2005.¹⁹
- Through a collective effort of the entire beef chain, including breeding, feeding and trimming practices at retail, the total fat content for a completely trimmed Sirloin Steak declined 34% from 1963 to 2010, and the saturated fat content declined 17% between 1990 and 2010.²⁰

Fatty Acid Profile of Beef

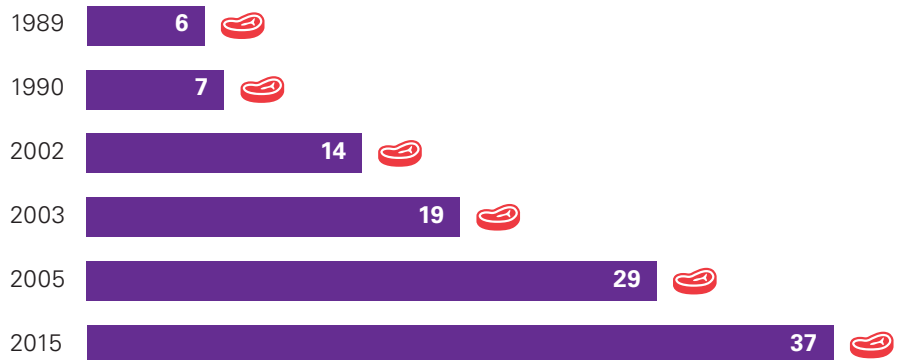
**85g (3-ounce) Portion,
Visible Fat Trimmed, Cooked
Total Fatty Acids – 6.44g**

- Polyunsaturated Fatty Acids 0.36g
- Saturated Fatty Acids 2.76g (Stearic Acid 0.96g)
- Monounsaturated Fatty Acids 3.32g



Source: U.S. Department of Agriculture Nutrient Database for Standard Reference 2015. Release 28, Nutrient Data Laboratory Home Page: <http://www.ars.usda.gov/ba/bhnrc/ndl>. Based on cooked servings.

Number of Beef Cuts Meeting USDA Guidelines for Lean



The cattle community has successfully reduced the amount of external trim on retail cuts.



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Beef's High-Quality Protein

Important research over the last five years has demonstrated the significance of high-quality protein, such as beef, in the diet and has emphasized science-based approaches for optimizing protein intake for health. A supplement to the June 2015 edition of the *American Journal of Clinical Nutrition* outlines the latest evidence on high-quality protein's role in health.²¹⁻²⁶

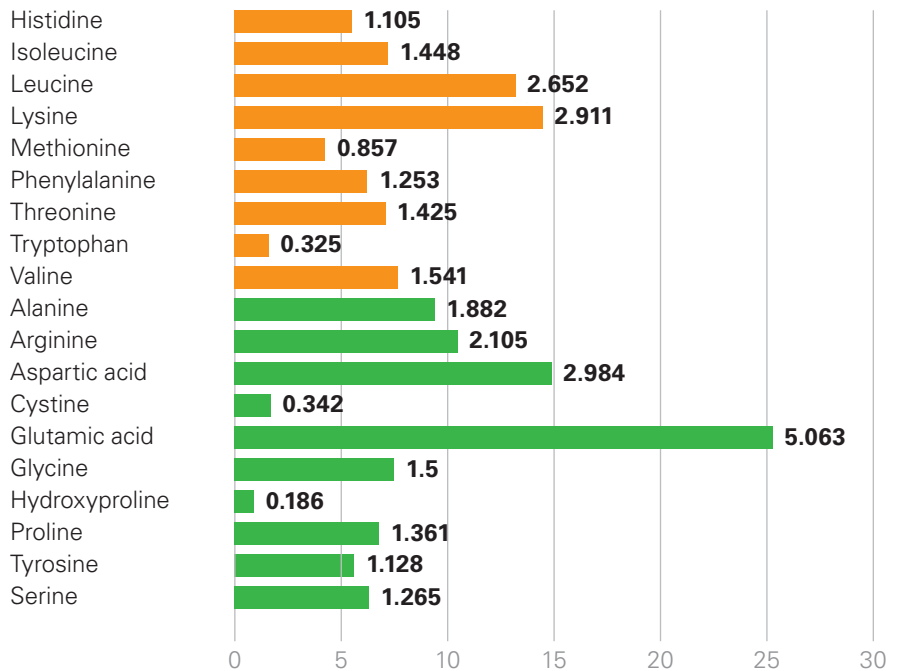
Some key concepts explored include:

- Recent research indicates that eating high-quality protein foods, such as lean beef, with optimal ratios of essential amino acids at multiple meals each day is important to support overall metabolic health.²³
- Eating more high-quality protein, combined with regular activity (a balance of strength training and aerobic-style exercise), can help slow or prevent sarcopenia.²⁴
- People who eat high-quality, nutrient-dense protein foods like beef each day tend to have adequate intakes of a number of nutrients, particularly those nutrients commonly underconsumed.²⁵
- An emerging body of research supports the case for an approach that moderately enhances protein recommendations beyond the Recommended Dietary Allowance (RDA) and balances protein intake throughout the day to improve many health outcomes.²¹
- Consuming protein at a level of 1.0-1.6 grams per kilogram of body weight per day (a quantity above the RDA of 0.8 grams per kilogram of body weight per day, but well within the Accepted Macronutrient Distribution Range [AMDR] for protein) may support a variety of health outcomes.²¹
- Eating more protein, as part of a reduced-calorie diet, can support weight loss and maintenance by boosting metabolism, controlling/curbing appetite and helping the body retain muscle while losing fat.²²
- Preliminary research suggests that distributing protein intake throughout the day or eating about 20-30g of protein at each meal – breakfast, lunch and dinner – may improve the impact of higher-protein intake on various health outcomes.²³

Foods containing high-quality proteins require less energy intake to meet Essential Amino Acid (EAA) requirements

Amino Acid (g) Content Per 100g Beef

Amino Acid



Beef, composite of Trimmed Retail Cuts, 0" trim, lean only, all grades, cooked (Per 100g)

■ Essential Amino Acids
■ Nonessential Amino Acids

Source: U.S. Dept. of Agriculture, Agriculture Research Service. 2015. U.S. Dept. of Agriculture National Nutrient Database for Standard Reference 2015. Release 28, Nutrient Data Laboratory Home Page: <http://www.ars.usda.gov/ba/bhnrc/ndl>.

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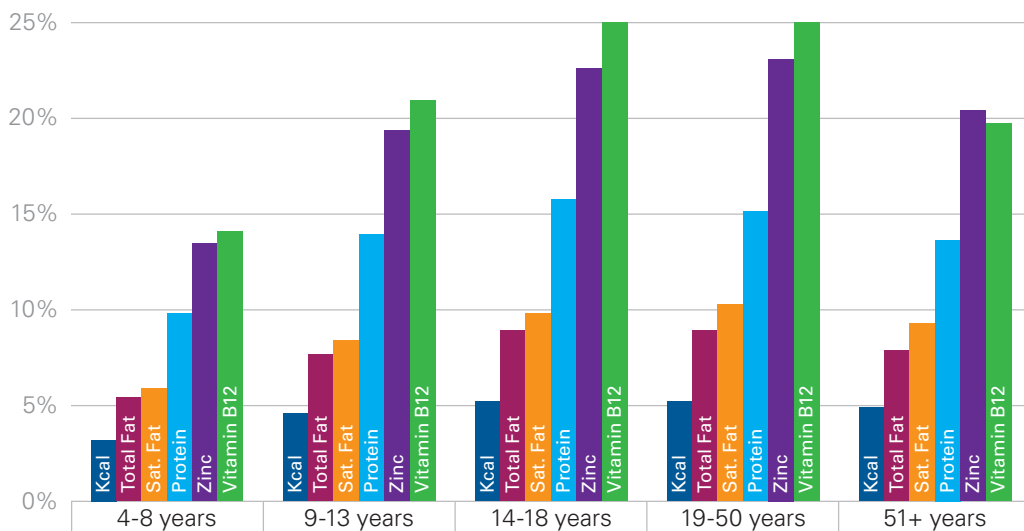
Enjoying Beef as Part of a Healthy Dietary Pattern

In recent years, the association between dietary patterns and health has emerged as an important central concept in developing dietary recommendations. The Western dietary pattern (most commonly characterized by high intakes of refined grains, sugar, red meat and other animal products and fat) is frequently being associated with negative health outcomes such as an increased risk of colon cancer, heart attack and diabetes. More prudent dietary patterns, on the other hand, which incorporate high intakes of fish, poultry, whole grains, fruits, vegetables,

legumes, nuts and seeds, have been associated with improved health outcomes. Alternately, new research has shown that, as part of a DASH-like diet, beef can improve cardiovascular outcomes.²⁻⁴ Disentangling the independent effects of individual foods, such as red meat (including lean beef), in observational studies on health outcomes is a substantial challenge, but considering beef's unique nutrient profile and its popularity with the public, there is a need to understand how beef can support a healthful diet to which Americans can adhere.²⁷

Surprisingly, most Americans are enjoying red meat in levels consistent with the Dietary Guidelines but there is a need to help people pair beef in a dietary pattern that is also rich in fruits, vegetables and whole grains.^{16,17,27,28} In fact, research shows many Americans may benefit from a moderate-to-higher, high-quality protein diet because of its positive role in weight management, healthy aging and disease prevention.⁸⁻¹¹

Beef's Contribution of Calories, Fat and Key Nutrients to U.S. Diets



- On average, Americans consume 1.5 ounces of fresh lean red meat (1.25 ounces fresh lean beef) daily, and a recent analysis of NHANES data indicates that total beef consumption (not just lean beef) contributes 10% or less of saturated fat to the overall American diet, yet up to 25% of many essential nutrients.^{16,17,29}

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Visit BeefResearch.org for more information about the Beef Checkoff-funded Human Nutrition Research program and to download fact sheets about the science behind the role of beef in a healthful lifestyle.



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