

**SCIENCE UPDATE**

# Lean Beef & Cardiometabolic Health



Funded by Beef Farmers and Ranchers

## Dear Colleague,

Now more than ever before, we have a better understanding of the connection between beef and heart health. Many early studies evaluated red meat intake in overall unhealthy dietary patterns and lifestyles. However, more recent randomized controlled clinical trials highlight the role of lean beef in heart-healthy dietary patterns.

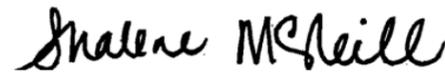
Over a decade ago, a landmark study, Beef in an Optimal Lean Diet (BOLD) (Russell et al., 2012), found that following a DASH-style dietary pattern (Dietary Approach to Stop Hypertension) with lean beef improved total and LDL cholesterol levels. This dietary pattern was rich in vegetables, fruits, whole grains, and low- and non-fat dairy, and included 4-5 oz of lean beef daily. Since then, more evidence has accumulated supporting beef's role in cardiometabolic health. In fact, a 2024 comprehensive systematic review and meta-analysis of randomized human clinical trials (summary shown on page 12) demonstrated that eating two (3-oz) servings of unprocessed beef, on average, daily, had no significant impact on most cardiovascular disease risk factors (Sanders et al., 2024).

Within this research booklet, you will find four additional relevant research summaries:

- A randomized clinical feeding trial published in the *American Journal of Clinical Nutrition* (Fleming et al., 2021), found that following a Mediterranean-style dietary pattern that included varying amounts of fresh, lean beef (0.5–5.5 oz per day) led to improvements in LDL cholesterol levels.
- A randomized clinical feeding trial, published in the *American Journal of Clinical Nutrition* (O'Connor et al., 2018), found that by incorporating 7-18 oz of fresh, lean red meat (beef and pork) per week, within a Mediterranean-style dietary pattern, individuals saw improvements of cardiometabolic disease risk factor profiles (i.e., LDL cholesterol, ApoB, blood pressure).
- A cross-sectional analysis, published in the *American Journal of Clinical Nutrition* (Wood et al., 2023), conducted in a multi-ethnic cohort, demonstrated that when adjusted for body mass index (BMI), intake of either unprocessed red meat (beef, pork or lamb), or processed red meat was not directly associated with any markers of inflammation, suggesting that body weight, not red meat, is likely the driver of increased systemic inflammation.
- A randomized clinical trial, published in *Obesity* (Clina et al., 2023) evaluated a high protein diet (40% of energy from protein), including lean beef, and a normal protein diet (21% of energy from protein), excluding beef, and concluded that a high-protein, healthy diet with lean beef can be effective for improving important cardiometabolic health goals such as weight loss and glucose control.

Evidence supports the inclusion of lean beef as part of a heart-healthy diet, and high-quality lean beef is more accessible than ever. In fact, about 65% of fresh beef cuts in the retail case meet USDA's definition of "lean" and more than half of beef's fatty acid profile is made up of heart-healthy, monounsaturated fats. In this toolkit, we have included tips for selecting lean cuts and resources to help support your patients with flavorful, heart-healthy eating.

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## Study Comparison Chart

STUDY	INTERVENTION	RCT	MEASURES	RESULTS
Fleming et al., 2021	0.5 vs 2.5 vs 5.5 oz lean beef daily in Mediterranean Diet vs Avg. American Diet (2.5 oz lean beef daily)	✓	 Blood Lipids & Lipoproteins	 Mediterranean Diet groups: Total Cholesterol, Non-HDL, LDL, ApoB
O'Connor et al., 2018	18 oz (MED-Red) vs 7 oz (MED-Control) Lean Red Meat/Week in Mediterranean Diet	✓	 Blood Lipids, Lipoproteins, & Blood Pressure	 Total Cholesterol (both), LDL (MED-Red), Blood Pressure (both)
Wood et al., 2023	No Intervention (Cross-sectional Analysis)	X	 Food Intake and Metabolites	 No association between red or processed meat and inflammation
Clina et al., 2023	40% (w/lean beef) vs. 21% (NO red meat) energy from protein	✓	 Weight Loss, Body Composition, & T2D Markers	<b>BOTH GROUPS:</b>  Lean Muscle Mass  Fat Mass, HbA1c, Insulin, Insulin Resistance, Blood Pressure, Triglycerides

#1

# Effect of varying quantities of lean beef as part of a Mediterranean-style dietary pattern on lipids and lipoproteins: a randomized crossover-controlled feeding trial

Jennifer A. Fleming, Penny M. Kris-Etherton, Kristina S. Petersen, David J. Baer

## Objectives:

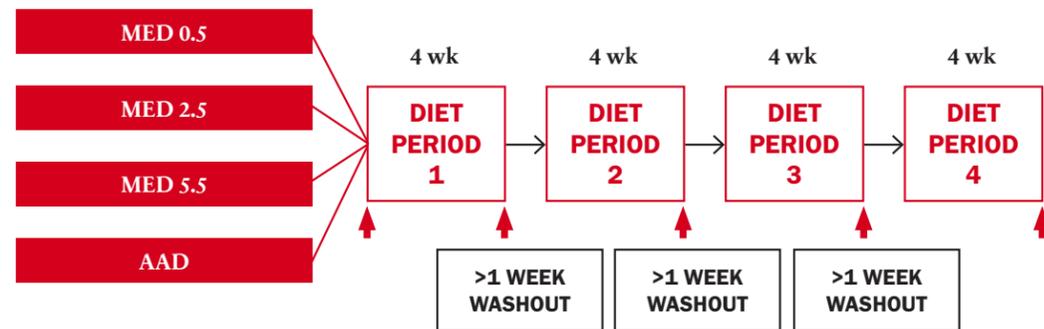
To evaluate the effects of a Mediterranean (MED) diet with 14 (MED0.5; 0.5 oz), 71 (MED2.5; 2.5 oz), and 156 (MED5.5; 5.5 oz) g/d/2000 kcal of lean beef compared with an average American (AA) diet on lipid and lipoprotein concentrations, particle number, and size.

**MED Diet:** (carbohydrate 42%, protein 17%, fat 41%, SFAs 8%, MUFAs 26%, PUFAs 8%)

**AA Diet:** (carbohydrate 52%, protein 15%, fat 33%, SFAs 12%, MUFAs 13%, PUFAs 8%)

## Study Design:

A randomized, crossover, controlled feeding study was conducted at Penn State University and USDA-Beltsville Human Nutrition Research Center. Fifty-nine individuals completed the study. Participants followed all four diets for four weeks each, with a one week break between diet periods. Blood samples were drawn at the beginning of the study as well as after each diet period. Three of the four diets contained varying amounts of lean beef (0.5, 2.5, 5.5 ounces) as part of a healthy Mediterranean dietary pattern, which provided 41% of calories from fat, 42% from carbohydrates and 17% from protein. The MED0.5 diet included 0.5 ounces of lean beef each day, which is the amount recommended in the Mediterranean diet pyramid. The MED2.5 diet included 2.5 ounces lean beef each day, which represents the amount an average American eats in a day. The average American diet (control) also included 2.5 ounces lean beef each day, but diet composition differed. Lastly, the MED5.5 diet included 5.5 ounces lean beef each day, which previous research demonstrated having certain heart health benefits (Roussel et al 2012; Roussel et al 2014). All three Mediterranean diet periods included olive oil as the predominant fat source, 3-6 servings of fruits, and 6 or more servings of vegetables a day. The beef included in these diet periods was either lean or extra-lean.



## Results:

- All three Mediterranean-style diets decreased LDL cholesterol from baseline, similarly, while the AA diet did not.
- LDL particle numbers significantly reduced from baseline following all three Mediterranean diet periods, but a significant decrease was observed in the MED0.5 and MED2.5 diets, compared to the AA diet.
- Compared with the AAD, non-HDL cholesterol and apoB were lower following the 3 Mediterranean-style diets with no differences between the diets.

## Key Takeaways:



1. The inclusion of lean beef did not diminish the health benefits of the Mediterranean-style dietary patten.



2. This study demonstrates that the consumption of a healthy Mediterranean-style dietary pattern with up to 5.5 ounces of lean beef per day led to improvements in total cholesterol, LDL cholesterol, non-HDL cholesterol, and apoB when compared with an average American dietary pattern.



3. Individuals have the flexibility to choose lean beef as part of a heart-healthy dietary pattern.

## Citation:

Fleming JA, Kris-Etherton PM, Petersen KS, Baer DJ. Effect of varying quantities of lean beef as part of a Mediterranean-style dietary pattern on lipids and lipoproteins: a randomized crossover controlled feeding trial. Am J Clin Nutr 2021;113(5):1126-36.

## Link to Full Study:

<https://doi.org/10.1093/ajcn/nqaa375>



# #2

## A Mediterranean-style eating pattern with lean, unprocessed red meat has cardiometabolic benefits for adults who are overweight or obese in a randomized, crossover, controlled feeding trial

Lauren E. O'Connor, Douglas Paddon-Jones, Amy J. Wright, Wayne W. Campbell

### Objectives:

To assess the effects of consuming different amounts (~7 or ~18 ounces) of fresh (unprocessed) lean red meat as part of a healthy Mediterranean-style eating pattern on cardiometabolic disease risk factors.

### Study Design:

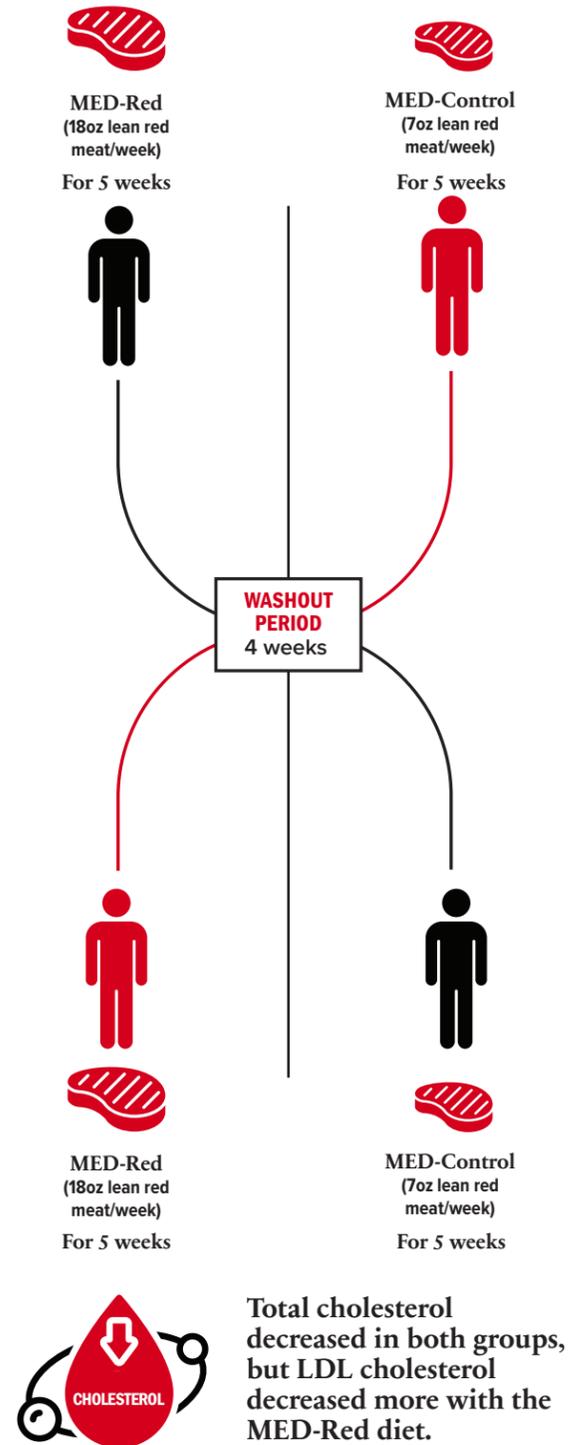
A randomized, crossover, controlled feeding trial was conducted in West Lafayette, IN. Forty-one overweight/obese adults completed the study. Participants followed both diets (a Mediterranean-style eating pattern with ~18 ounces of red meat per week (MED-Red) or ~7 ounces of red meat per week (MED-Control) for 5 weeks, separated by a washout period of at least 4 weeks.

Both diets included fresh (unprocessed) lean red meat from beef and pork tenderloins. During the MED-Control intervention, participants consumed poultry (chicken and turkey breasts with the skin removed prior to cooking) and other protein-rich foods to attain a similar amount of protein as the MED-Red intervention.

Changes in cardiometabolic disease risk factors including blood pressure, atherosclerotic-promoting blood lipids, glucose, and insulin levels were evaluated.

### Results:

- Total cholesterol decreased in both Mediterranean patterns, but greater reductions occurred with MED-Red than with MED-Control.
- Low-density lipoprotein decreased with MED-Red but was unchanged with MED-Control.
- No significant changes were observed for triglycerides, total cholesterol:HDL ratio, glucose, or insulin for either Mediterranean pattern.
- All blood pressure parameters improved, except during sleep, independent of the red meat intake amount.



### Key Takeaways:



1. A Mediterranean-style eating pattern that includes up to 18 ounces of cooked, lean, unprocessed red meat per week can positively impact heart health by decreasing total cholesterol, LDL cholesterol and blood pressure.



2. The Mediterranean-style eating pattern that included 18 ounces (MED-Red) of cooked, lean, unprocessed red meat per week was found to be more effective than the one that included 7 ounces (MED-Control) in lowering LDL cholesterol from baseline.



3. Individuals can enjoy lean beef as part of a heart-healthy Mediterranean-style eating pattern.

### Citation:

O'Connor LE, Paddon-Jones D, Wright AJ, Campbell WW. A Mediterranean-style eating pattern with lean, unprocessed red meat has cardiometabolic benefits for adults who are overweight or obese in a randomized, crossover, controlled feeding trial. *Am J Clin Nutr.* 2018;108(1):33-40.

### Link to Full Study:

<https://doi.org/10.1093/ajcn/nqy075>



# #3

## Untargeted metabolomic analysis investigating links between meat intake and markers of inflammation

Alexis C. Wood, Mackenzie K. Senn, Meghana Gadgil, Matthew A. Allison, Ioanna Tzoulaki, Philip Greenland, Timothy Ebbels, Paul Elliott, Mark O. Goodarzi, Russell Tracy, Jerome I. Rotter, and David Herrington

### Objectives:

To identify whether any metabolites associated with red meat intake are also associated with inflammation, an emerging marker for cardiometabolic disease..

### Study Design:

A cross-sectional analysis was conducted on observational data of older adults participating in the Multi-Ethnic Study of Atherosclerosis (MESA) study. MESA researchers study a diverse, population-based cohort of 6,814 asymptomatic men and women aged 45-84 years over time. Approximately 4,000 participants had complete metabolomic data for consideration in this study. Metabolomics allows scientists to study diet-disease relationships at the molecular level.

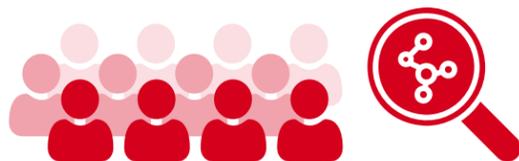
At the baseline examination, usual dietary intake over the previous year was assessed with a modified Block-style, 120-item food frequency questionnaire (FFQ). Additionally, clinical characteristics (e.g., physical activity, medications) and anthropometric measurements (e.g., height, weight, body mass index (BMI)) were obtained by trained personnel using standardized protocols and a fasting blood sample was drawn.

Participants were then followed for 15 years. Six markers of inflammation were available for analysis: C-reactive protein (CRP), interleukin-2 (IL-2), interleukin-6 (IL-6), fibrinogen, homocysteine, and tumor necrosis factor alpha (TNF- $\alpha$ ). An array of dietary intake metabolites in the blood were also measured. Data analyses were conducted to (1) examine whether processed and unprocessed meat intake are each associated with markers of inflammation; (2) conduct metabolome-wide association studies with unprocessed red meat intake and processed red meat intake; (3) examine whether any metabolites associated with unprocessed and/or processed red meat intake were also associated with plasma markers of inflammation; and (4) establish the extent that BMI confounded any relationships identified.

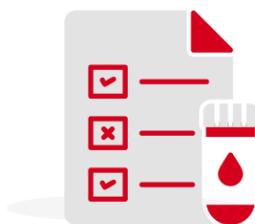
### Results:

- In analyses controlling for BMI, neither processed nor unprocessed forms of red meat were directly associated with markers of inflammation.
- When adjusting for BMI, unprocessed red meat was inversely associated with markers for glutamine, an amino acid inversely associated with CRP and inflammation.

Approximately 4,000 participants had complete metabolomic data for consideration in this study.



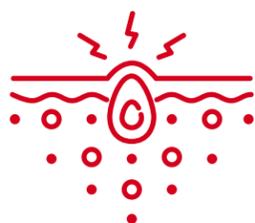
Clinical characteristics and anthropometric measurements were obtained by trained personnel and a fasting blood sample was drawn.



Participants were followed for 15 years.



In analyses controlling for BMI, neither processed nor unprocessed forms of red meat were directly associated with markers of inflammation.



### Key Takeaways:



1. Overall, adiposity is an important component of diet-inflammation relationships. These analyses were unable to support a direct relationship between red meat intake and inflammation, which plays a role in the development of chronic diseases. In other words, red meat was not associated with inflammation (as assessed with CRP) when analyses were controlled for BMI -- suggesting body weight, not red meat, was the driver of any increase in systemic inflammation.



2. Results further support the greater understanding gained when measuring plasma markers to track diet and disease risk associations, versus relying on self-reported dietary intake alone.



3. Additionally, the observation that unprocessed red meat accounted for less than 1% of the variance in glutamine, further supports that red meat intake does not contribute to inflammation.

### Citation:

Wood AC, Graca G, Gadgil M, Senn MK, Allison MA, Tzoulaki I, Greenland P, Ebbels T, Elliott P, Goodarzi MO, Tracy R, Rotter JI, Herrington D. Untargeted metabolomic analysis investigating links between unprocessed red meat intake and markers of inflammation. *Am J Clin Nutr* 2023;118(5):989-99.

### Link to Full Study:

<https://doi.org/10.1016/j.ajcnut.2023.08.018>



# #4

## High and normal protein diets improve body composition and glucose control in adults with type 2 diabetes: a randomized trial

Julianne G. Clina, R. Drew Sayer, Zhaoxing Pan, Caroline W. Cohen, Michael T. McDermott, Victoria A. Catenacci, Holly R. Wyatt, James O. Hill

### Objectives:

To compare a high protein (HP) diet including beef versus a normal protein diet (NP) without red meat for weight loss, body composition changes, and indicators of type 2 diabetes (T2D) status during a 52-week behavioral weight loss intervention in adults with T2D.

### Study Design:

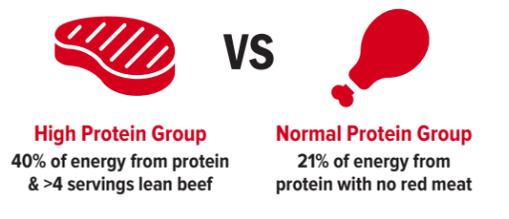
Researchers conducted a multisite (Denver, CO and Birmingham, AL) randomized clinical trial to compare a HP diet (40% of energy from protein) with four or more 4- to 6-oz servings of lean beef per week (as the only source of red meat) vs. a NP diet (21% of energy from protein) devoid of red meat for weight loss, body composition changes, and indicators of T2D status (e.g., glucose control) during a 52-week weight management intervention in individuals with T2D (diagnosis within the past 6 years).

The research study followed 106 individuals with 71 who completed the study (equally distributed across the two intervention groups). All participants followed the State of Slim (SOS) weight management program for the first 16 weeks of the study, which consisted of weekly group classes led by a trained coach. In the remaining 36 weeks, participants completed the SOS Next Steps program, which consisted of 18 biweekly group classes for the remainder of the intervention. Both intervention diets were reduced in calories to support weight loss and limited to the food listed for each phase of the SOS program. It is important to note that the NP diet was higher in protein than the average American diet, in which protein intake averages 14-16% of total energy.

### Results:

- All study participants, regardless of their diet assignment, on average, lost weight with no statistical difference between groups (HP: 10.2±1.6 kg (-9.4%) and NP: 12.7±4.8 kg (-11.8%)).
- Both groups experienced a reduction in fat mass percentage (HP: -4.3% and NP: -3.8%) and an increase in lean body mass percentage (HP: +4.2% and NP: +3.8%).
- It should be noted that lean body mass percentage increased, but absolute lean mass did not increase, as total weight lowered.
- All participants significantly improved in key indicators of T2D (HbA1c and fasting glucose levels), with no difference between groups. Both groups had a large percentage of participants improve HbA1c and fasting glucose levels to where they were no longer in the range for having T2D.
- At baseline, 74% of HP group and 62% of NP group had biomarkers in the range for T2D.
- At end of study, 38% of HP group and 39% of NP group no longer met diagnostic criteria for T2D.

### The 5 State of Slim “Diet Rules” to encourage weight loss:



**KEY TAKEAWAY:**  
Individuals have the flexibility to choose lean beef more often as part of a healthy diet

### Key Takeaways:



1. Both groups lost the same amount of weight and had similar improvements in markers of T2D. Researchers concluded that lean beef is just as effective as other protein choices to help people achieve important health goals such as weight loss and improved glucose control, while maintaining muscle mass and supporting a healthy heart, as part of a healthy lifestyle plan that included exercise.



2. People are more likely to maintain a healthy diet if it is also satisfying and enjoyable. This study shows that people can continue to include fresh lean beef (four or more times per week), which is the preferred protein food by many Americans, as part of diets that supports weight loss.



3. At a time when people are increasingly interested in adopting higher protein diets because of their demonstrated benefits such as appetite control and improved body composition, this research illustrates higher protein diets can be flexible in managing T2D, and associated disorders such as heart disease, with protein intake at both 40% and 21% of calories – and with or without lean beef – to help people achieve goals based on their protein preferences.

### Citation:

Clina JG, Sayer RD, Pan Z, Cohen CW, McDermott MT, Catenacci VA, Wyatt HR, Hill JO. High- and normal-protein diets improve body composition and glucose control in adults with type 2 diabetes: a randomized trial. *Obesity (Silver Spring)* 2023;31(8):2021-30.

### Link to Full Study:

<https://onlinelibrary.wiley.com/doi/10.1002/oby.23815>



# Beef Consumption and Cardiovascular Risk Factors: A Systematic Review and Meta-Analysis of Randomized Controlled Trials

**Sanders et al. (2024) Current Developments in Nutrition**

This systematic review and meta-analysis found that eating two (3-ounce) servings of unprocessed or minimally processed beef, on average, in a balanced dietary pattern, has minimal to no impact on most cardiovascular disease risk factors.

## Objectives:

To perform a systematic review and meta-analysis of results from randomized clinical trials (RCT) evaluating the effects of unprocessed or minimally processed beef intake on select cardiovascular risk factors, namely lipoprotein-related variables, systolic and diastolic blood pressures, and to assess whether the observed effects differ by study quality (defined by rigor, risk of bias, transparency, and reproducibility) and funding source.

## Study Design:

- 20 gold-standard RCTs
- Compared diets with unprocessed or minimally processed beef and diets with less/no beef
- Included measures of lipoproteins and blood pressure
- Study quality and bias assessed

## Key Takeaways:

1. Beef intake did not impact blood pressure, total cholesterol, high-density lipoprotein cholesterol (HDL-C), triglycerides, non-HDL-C, apolipoprotein (apo) A, apo B, or very low-density lipoprotein cholesterol (VLDL-C).
2. Beef contains more cholesterol-lowering or neutral fatty acids than cholesterol-raising fatty acids.
3. Beef consumption had a small, but statistically significant effect on LDL-C. However, further analysis showed that one study, a unique very-low calorie diet (600-770 calories) study, was the primary influence of this result. When removed using a standardized “one study removal” sensitivity analysis, the effect on LDL-C was no longer significant.
4. The average amount of beef in the “higher” beef treatments was about 5.7 ounces, indicating about 2 servings/day fit in a heart healthy dietary pattern.



When high-quality clinical trials analyze unprocessed or minimally processed beef as part of various dietary patterns, results have generally indicated that **beef consumption has no adverse effects on traditional risk factors for cardiovascular disease.**

**Citation:** Sanders LM, Palacios OM, Wilcox ML, Maki KC. Beef Consumption and Cardiovascular Disease Risk Factors: A Systematic Review and Meta-analysis of Randomized Controlled Trials. *Curr Dev Nutr.* 2024;8(12):104500. Published 2024 Nov 2. doi:10.1016/j.cdnut.2024.104500



FOR MORE INFORMATION ON BEEF NUTRITION:  
[beefitswhatsfordinner.com/nutrition](https://beefitswhatsfordinner.com/nutrition)



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# Tips For A Heart-Healthy Lifestyle



**Did You Know?** More than 30 scientific studies support the role of lean beef in a heart-healthy diet and lifestyle.<sup>1</sup> A protein powerhouse, lean beef also provides 9 other essential nutrients that support good health, from weight management and energy metabolism to immune system and bone health.<sup>2,4</sup> When making heart-healthy lifestyle changes, consider these actionable tips:



#1

**Go lean.** While ~65% of beef cuts in the meat case are lean, look for cuts with “loin” or “round” in the name to simplify choosing lean beef – think: Sirloin, Tenderloin, Top Round. When choosing ground beef, look for “lean” or “extra lean,” 93% lean or higher. **Fun Fact:** Save calories by straining off fat after cooking ground beef.



#2

**Keep portion size top-of-mind.** A 3 oz portion of cooked lean beef is about the size of a deck of cards, and provides about 25 grams of protein, plus iron, zinc, B vitamins and more in about 175 calories.<sup>2</sup>



#3

**Savor the flavor.** Beef’s savory flavor, rich aroma, and tenderness makes it simple and delicious to enjoy without added salt. Add extra flavor with onion, garlic, herbs, spices, citrus, and vinegars. **Fun Fact:** Beef is naturally low in sodium—great news for maintaining healthy blood pressure!



#4

**Build a balanced plate.** Beef is a flavorful, satisfying complement to fruits, vegetables, low-fat dairy, and whole grains—all part of a heart-healthy diet.<sup>5</sup> Look for American Heart Association® Heart-Check certified recipes (like the one on the back of this handout) for delicious and creative culinary inspiration.



#5

**Get active.** Maintaining lean muscle and a healthy weight is an important aspect of cardiovascular health. Most Americans should aim for at least 150 minutes of moderate-intensity physical activity per week. Research also shows higher-in-protein diets can help build and preserve muscle during weight loss.<sup>6</sup>

## REFERENCES:

1. McNeill SH. Inclusion of red meat in healthful dietary patterns. *Meat Sci* 2014;98:452-460. 2. U.S. Department of Agriculture, Agricultural Research Service. Food-Data Central, 2019. (Number: 13364). 3. Shams-White MM, Chung M, Du M, Fu Z, Insogna KL, Karlson MC, LeBoff MS, Shapses SA, Sackey J, Wallace TC, et al. Dietary protein and bone health: a systematic review and meta-analysis from the National Osteoporosis Foundation. *Am J Clin Nutr* 2017;105(6):1528-43. 4. Bauer J, Biolo G, Cederholm T, Cesari M, Cruz-Jentoft AJ, Morley JE, Phillips S, Sieber C, Stehle P, Teta D, et al. Evidence-based recommendations for optimal dietary protein intake in older people: a position paper from the PROT-AGE Study Group. *J Am Med Dir Assoc* 2013;14(8):542-59. 5. American Heart Association. Heart Healthy Lifestyle. <https://www.heart.org/en/healthy-living>. Accessed 12.16.21. 6. Clina JG, Sayer RD, Pan Z, Cohen CW, McDermott MT, Catenacci VA, Wyatt HR, Hill JO. High- and normal-protein diets improve body composition and glucose control in adults with type 2 diabetes: a randomized trial. *Obesity (Silver Spring)* 2023;31(8):2021-30.



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# Roasted Sun-Dried Tomato Beef Tri-Tip With Peppers And Sweet Potatoes

This Beef. It's What's For Dinner. recipe is Heart-Check certified by the American Heart Association®.



**8**  
**SERVINGS**



**265**  
**CAL**



**25 G**  
**PROTEIN**  
**(50% DV)**



- **3.1g Sat Fat**  
**(18% DV\*)**
- **2.2mg Iron**  
**(10% DV)**
- **4.6 mg Zinc**  
**(40% DV)**

\* Percent Daily Values are based on a 2,000-calorie diet

**SCAN FOR MORE HEART HEALTHY RECIPES!**



## Ingredients:

- 1 beef Tri-tip Roast (1 ½–2 pounds)
- 1/2 cup Italian dressing
- 1/4 cup sun-dried tomatoes
- 1/4 cup water
- 1 ½ pounds sweet potatoes, cut into 2" pieces
- 2 red bell pepper, cut into 2" pieces
- 2 tablespoons grated Parmesan cheese
- 1 teaspoon salt
- 1 Tablespoon fresh parsley (optional)

## Cooking:

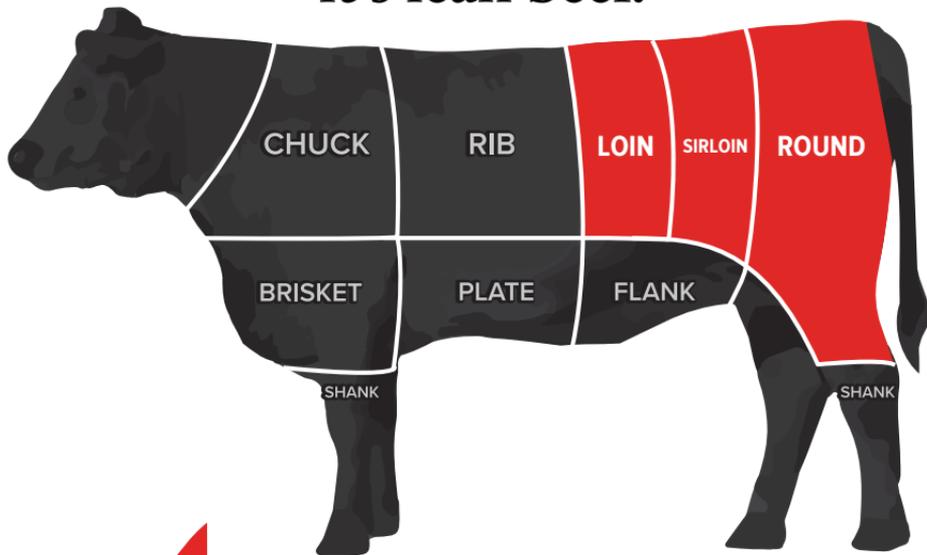
1. Preheat oven to 425°F. Place Italian dressing, tomatoes and water in blender or food processor container. Cover; process until smooth. Divide mixture evenly into thirds; reserve 2/3 tomato mixture.
2. Combine potatoes and peppers and 1/3 tomato mixture in large bowl; toss to coat. Place on rimmed baking sheet lined with parchment. Set aside.
3. Spread 1/3 tomato mixture evenly onto all surfaces of beef roast. Place roast on vegetables. Do not add water or cover. Roast in 425°F oven 30 to 40 minutes for medium rare; 40 - 50 minutes for medium doneness.
4. Remove roast when instant-read thermometer registers 135° for medium rare; 150° for medium. Transfer roast to carving board; tent loosely with aluminum foil. Let stand 20 - 25 minutes. (Temperature will continue to rise about 10°F to reach 145°F for medium rare; 160°F for medium) Meanwhile, increase oven temperature to 475°F. Stir vegetables and return to oven for 15 - 20 minutes or until desired doneness.
5. Carve roast across the grain into slices. Serve with vegetables. Coat all with remaining sauce. Sprinkle with Parmesan cheese. Sprinkle with parsley, if desired.

**Nutrition information per serving:** 265 Calories; 81.9 Calories from fat; 9.1g Total Fat (3.1 g Saturated Fat; 0.01 g Trans Fat; 0.8 g Polyunsaturated Fat; 4.2 g Monounsaturated Fat); 67.4 mg Cholesterol; 551 mg Sodium; 21.4 g Total Carbohydrate; 3.4 g Dietary Fiber; 25 g Protein; 2.2 mg Iron; 0.8 mg Vitamin B6; 1.3 mcg Vitamin B12; 4.6 mg Zinc; . This recipe is an excellent source of Protein, Niacin, Vitamin B6, Vitamin B12, Zinc, and Selenium; and a good source of Dietary Fiber, Iron, Potassium, and Choline.



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If it's  
**ROUND OR LOIN**  
it's lean beef.



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**FOR A FULL LIST OF LEAN CUTS SCAN THIS QR CODE**

