BEEF RESEARCH

Human Nutrition Research
In Progress, Funded Projects

Original Scientific Research

Effect of minimally processed meat and further processed meat on biomarkers and risk factors for cancer and cardiovascular disease (David Baer, USDA, ARS, BHNRC)

To compare the effect of consuming further- to minimally- processed meat products, in either a lower or higher quality diet, on biomarkers and risk factors for cancer and cardiovascular disease.
(ClinicalTrials.gov Identifier: NCT05589389)
Co-funded with Missouri Beef Industry Council, Kentucky Beef Council, Foundation for Meat & Poultry Research & Education

The effects of dietary beta-alanine and carnosine from beef intake on muscle fatigue in older adults (Cydne Perry, Indiana University, School of Public Health)

To compare the effect of a beef-based healthy dietary pattern to a lacto-ovo vegetarian diet on muscle fatigue in adults 65 years of age and older.
(ClinicalTrials.gov Identifier: NCT05860088)

Effects of beef consumption on skeletal muscle protein homeostasis and inflammatory factors in pre- and post-menopausal women (Robert Wolfe, University of Arkansas, Medical Sciences)

To compare the effects of beef as the major dietary source of protein, to a diet featuring plant-based protein sources on muscle protein and whole-body protein kinetics and skeletal muscle inflammatory markers in normal/overweight and obese postmenopausal females.
(ClinicalTrials.gov Identifier: NCT05714462)
Co-funded with Kansas Beef Council

Understanding the Cognitive and Brain Health Benefits of Increasing Beef Consumption in Young Adults (Aron Barbey, University of Nebraska, Lincoln)

To evaluate the effects of beef consumption on cognitive and brain health in healthy young adults, specifically measures of executive function, memory, psychological well-being, and sleep quality and measures of brain health derived from structural and functional brain imaging.
(ClinicalTrials.gov Identifier: NCT06690892)
Co-funded with Nebraska Beef Council, Texas Beef Council

Back to the Basics: Metabolic and Appetitive Characteristics of Meat and Potatoes (Mark Kern, San Diego State University)

To assess the impacts of meals composed of lean steak and potatoes (with a small portion of broccoli) in comparison to other common entrée/starch food combinations on metabolic and appetite responses.
(ClinicalTrials.gov Identifier: NCT06472011)
Co-funded with Texas Beef Council

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Beef as a key component of a diet that stimulates muscle protein synthesis (Tim Snijders, Maastricht University Medical Centre)

To evaluate the impact of consuming a diet, with beef being the main protein source, on daily muscle protein synthesis rates, with and without resistance exercise training, under free living conditions in healthy older adults, in comparison to a diet with an isonitrogenous diet containing no animal-based protein sources over a 10 day period.

Co-funded with Kansas Beef Council

Assessing the role of daily beef consumption as part of a higher protein diet for 16 weeks on markers of successful aging in physically active postmenopausal women (Jamie Baum, University of Arkansas)

To investigate the effects of daily beef consumption as part of a higher protein diet with or without regular physical activity on wellbeing in physically active postmenopausal women.

Co-funded with Missouri Beef Industry Council

Lifestyle Behaviors in Individuals taking GLP-1 medications for obesity and/or Type 2 diabetes (James Hill, University of Alabama, Birmingham)

To obtain information about lifestyle behaviors in individuals taking the GLP-1 medications including what these individuals are eating (e.g., what they seek out and what they avoid) and whether they are more or less inclined to exercise.

Co-funded with Texas Beef Council

Existing Research Assessment

Data pooling project for investigation of beef, red meat, omnivorous dietary patterns, and human health via metabolomics and machine learning methods (David Baer, USDA, ARS, BHNRC)

To investigate metabolomic biomarkers predictive of habitual consumption of beef in the context of various dietary patterns.

Co-funded with Kansas Beef Council

Beef consumption and health outcomes: A systematic analysis of rigor, reproducibility, and verifiability of current evidence (David Allison, Indiana University School of Public Health-Bloomington)

To characterize the existing randomized control trial evidence on beef consumption and specified health outcomes, its quality and trustworthiness, and identify correlates thereof. (OSF registration https://doi.org/10.17605/OSF.IO/RFVJ9)

Associations of unprocessed beef consumption and brain health (Andrew Mente, McMaster University)

To determine the effects of unprocessed beef intake on MRI assessed brain imaging and related changes in cognitive function and brain health.

Co-funded with Kansas Beef Council

Molecular markers of beef intake: A personalized nutrition approach to understanding the relationship of red meat to health (Alexis Wood, Baylor College of Medicine)

To better understand the association of beef intake in the long-term health of adults by analyzing prospective cohort data from the Multi-Ethnic Study of Atherosclerosis (MESA) across a 15-year period and multi-omics data (transcriptomic data; metabolomics data; proteomics data).

Co-funded with Nebraska Beef Council

The impact of beef consumption as a part of healthy dietary pattern on health benefits in aging adults (Debra Sullivan, The University of Kansas Medical Center)

To assess the impact of beef intake, as a part of healthy diet, measured by the Healthy Eating Index (HEI), on cognitive function, cardiometabolic markers, and body composition in older adults.

Co-funded with Kansas Beef Council

Developing and Applying a Methodology for Assigning Heme and Non-Heme Iron Values to Foods in a Food and Nutrient Database and Dietary Assessment Software Used by Nutrition Researchers (Lisa Harnack, University of Minnesota)

To develop and apply a methodology to assign heme and non-heme iron values to all foods in the University of Minnesota Nutrition Coordinating Center Food and Nutrient Database and its accompanying dietary analysis software application- Nutrition Data System for Research (NDSR).

Co-funded with Texas Beef Council

Contribution of beef to diet intake and quality in U.S. school children via school meals (Kristina Petersen, Pennsylvania State University)

To assess the contribution beef makes when consumed in school meals to total calories and select nutrients (from school meals and total day intakes), diet quality, and nutrient adequacy (i.e., ability to meet nutrient recommendations) in school-age school meal consumers.

Co-funded with Texas Beef Council

Systematic Review on Meat consumption and Growth, Body Composition, and Risk of Obesity (Stephen Fleming, Traverse Science Inc)

To conduct a systematic review to answer the research question: What is the relationship between meat consumption and growth, size, body composition, risk of overweight and obesity, and weight loss and weight maintenance? following the USDA NESR systematic review protocol.

(PROSPERO registration: CRD42024605479)

Co-funded with Texas Beef Council

Linkages among dietary protein amount and source, dietary nutrient sufficiency, land-use feasibility, and estimated environmental impacts (Robin White, Virginia Tech)

To simulate diets of different protein content (10 to 35% of energy intake from protein) and protein source to compare dietary adequacy, land-use feasibility, and estimated environmental impacts (e.g. water footprint).

Mental health outcomes and microbiota alterations with lean red meat intake within the context of Healthy Eating Index: A secondary analysis of existing data (Samitinjaya Dhakal, South Dakota State University)

To explore how lean red meat consumption within a healthy (i.e., high quality) diet is associated with gut microbiota composition and diversity and mental health outcomes.

Assessing the role of beef in healthy anti-inflammatory American diets (EpiX Analytics LLC)

To assess the role of unprocessed and processed beef as part of healthy diets and markers of inflammation.

A scoping review of health impacts of popular meat-centric diets and variability in protein source and amount (BOK Enterprises, LLC)

To conduct a literature review on the health impacts of popular meat-centric diets (e.g., keto diet, carnivore diet, etc).