Beef Industry Nutrition Programs

Nutrition research and education programs funded with beef checkoff dollars

"Scientific research sponsored by federal government and by industry has contributed to the extension and quality of human life."

Margaret Flynn, Ph.D.
Professor of nutrition and pediatrician, University of Missouri – Columbia

This quote from Dr. Margaret Flynn appears on the cover of the 1991 research summary of the National Live Stock and Meat Board. It's a philosophy that summarizes both the overall objective, and the success, of nutrition research programs funded by the Meat Board, an organization now known as the National Cattlemen's Beef Association (NCBA).

The timeline that follows provides an overview of nutrition research and nutrition education projects funded by America's beef producers through this organization since its inception in 1922. Through checkoff dollars, these programs demonstrate the industry's commitment to both nutrition research in general, and to science-based research to support its nutrition education, communications and consumer marketing programs.

1922

- National Live Stock and Meat Board (NLSMB) is founded.
- The first research fellowship(s) is established by NLSMB.
- The National Research Council used $6,000 for research on the place of meat in the diet.
- "Meat For Health" slogan is selected from 62 slogans because "it best set forth the features of our basic food."
- "Meat For Health" week is established to educate the general public about the true food value about meat and its relationship to health.

1923/24

- The first cooperative partnership with the United States Department of Agriculture (USDA) and Postmaster General is established with the display of 54,500 copies of "Meat Is Wholesome" poster in U.S. post offices and treasury buildings.
- Dr. G. H. Whipple, University of Rochester, looked at the relation of meat and meat products to blood regeneration. He found liver could be fed to prevent and cure anemia, thus changing public attitude about liver.

1924

- Dr. E.B. Forbes at the Pennsylvania State College researched the iron content of meat. He found beef and veal contained two-thirds more iron than pork, and lamb had ten times as much iron than milk.
- Dr. James R. Slonaker, physiologist of Stanford University,shared his 12 years of research revealing a diet of animal protein and vegetables is superior to a diet of vegetables alone. He presented his remarks to the Board and to the annual meeting of the American Society of Animal Production in Chicago.

1926

- The American Medical Association updated its educational posters including one on iron content.
- Through research funded by the NLSMB and with efforts of its representative in the field of nutrition, beef appeared at the top of the list of foods high in iron.

1929

- "Food and Nutrition News," communicates sound science to nutrition, home economics and health care professionals. (In 1998, this newsletter was replaced with the web site, www.beefnutrition.org.

1930's

- Dr. Whipple received the ***Nobel Prize*** for his discovery on the importance of liver in the diet.
- G.O. Burr, Ph.D., at the University of Minnesota, began his study of the role of fat in nutrition and physiology. He found that even a small amount of fat, such as lard, contained certain fatty acids that promoted normal growth and clearing of skin.
- C. A. Elvehjem, Ph.D., at the University of Wisconsin, studied the value of meat as a source of vitamins. This work looked at the vitamin content of meat and how best to retain vitamins when cooking meat.
- P.R. Cannon, M.D., at the University of Chicago, looked at protein utilization and energy intake showing meat provided nutrients required for work performance and the release of energy.
- L.E. Holt, Jr., M.D., Johns Hopkins University School of Medicine and New York University College of Medicine, studied amino acids requirements.

1943

- C.A. Elvehjem, Ph.D., at the University of Wisconsin, also looked at the amino acid content of meat and its relationship to nutrition.
- R.M. Leverton, Ph.D., University of Nebraska, actually began his research on meat and nutritional anemia in 1939. He continued to study the role of iron in meat for both women and infants.
- P.B. Mack, Pennsylvania State College, studied meat in the diets of older persons. He found that as the age of the subjects increased, the lower levels of lean meat intake were related to decreases in hemoglobin and red cells in the blood. This resulted in fatigue and nervousness and thus, progressively poorer reflexes and increasing heart dysfunctions.
- The Leverton-Odell studies at the Oklahoma Experiment Station provided quantitative information on the nutrient composition of cooked beef, veal, lamb and pork. Supported by a Meat Board research grant, this information provided the data base for the meat portion of the 1963 edition of the USDA handbook, Composition of Foods: Raw, Processed, Prepared.

1962

- The Meat Board devoted about 10 percent of its annual expenditures to research grants, including nutrition. In addition, about six percent of the budget goes to the Nutrition Department for work with professional nutritionists, dietitians, health officials and medical professionals. In essence, about one sixth of Meat Board resources have been devoted to research and related efforts. (This documentation appears in, "Report and Recommendations of the Program and Policy Study Committee to the Directors of the National Live Stock and Meat Board," by Dr. Herrell DeGraff, 1962.)

1963-71

- F. Kummerow, Ph.D., of the University of Illinois, began the study of serum cholesterol.
- G.V. Mann, M.D., of Vanderbilt University, studied the Masai -- a carnivorous tribe in Tanganyika to demonstrate that eating meat, in and of itself, does not predispose humans to heart disease.

1968

- David Kritchevsky, Ph.D., The Wistar Institute, began studying cholesterol metabolism. The 1970's mark the beginning of the study of fat and cancer in meat research.

1970

- W.O. Caster, Ph.D., University of Georgia, studied the nutritional significance of the fatty acids of animal fats.

1972

- K.K. Carroll, Ph.D., University of Western Ontario, studied the role of dietary fats in breast cancer.

- R. Reiser, Ph.D. at Texas A&M University, looked at the influences of constituents of dietary fats and oils on blood levels of cholesterol.
- R.B. Wilson, D.V.M., Ph.D., University of Missouri, investigated the interaction of dietary fat and bulk in cancer of the colon, among others.
- A partnership between USDA and the beef, pork and lamb divisions of the Meat Board provided current and scientifically correct nutrient information on red meat. This coordinated effort was known as the Meat Nutrient Composition Studies.
- U.S. Dietary Goals announced. The Meat Board programs focused on nutrition with the theme, "Beef – The Food You're Right To Like," emphasizing nutrient density.
- M. Flynn, Ph.D., University of Missouri, studied dietary beef and serum lipids.
- R. Reiser, Ph.D., and R. Wood, Ph.D. at Texas A&M, compared blood lipid responses to coconut oil & beef tallow.
- Nutrient Composition studies were released. This information replaced the 25-year-old data in use at the time.
- The *Meat Nutri-Facts* program was introduced and promoted in a point-of-purchase program with a triad of partners: the Meat Board, the Food Marketing Institute and the American Meat Institute. The nutrition focus was on meat's low calories and high nutrient density. The *Meat Nutri-Facts* program later won the ***President's Circle Award*** for excellence in nutrition education from the American Dietetic Association.
- Burdette C. Breidenstein, Ph.D., Meat Board director of research/nutrition information, compiled data showing Americans actually consume about 4 ounces of red meat per day, far less than "disappearance" figures cited by those who say Americans consume too much red meat. Coupled with the new data on red meat's nutritive value, this data showed that consumers can eat normal portions of red meat each day and follow a lowfat or low-cholesterol diet.

1983

- *A Food Guide For The First Five Years* was introduced with tips for feeding children ages one through five.

1983-84

- The key red meat industry organizations adopted a *Statement of Principles* to define the nature and scope behind any response or action by the industry connected with the diet-health issue. In addition, the Meat Board earmarked 43 percent of its 1984 budget to implement a three-point action plan addressing the diet-health issue.
- In 60 years of nutrition research investment, the Meat Board had funded 293 nutrition research programs. These were in the areas of protein/amino acids (59); vitamins (16); minerals (30); fat, cholesterol and cardiovascular health (115); general nutrition (59); and cancer (14).

1980s

- S.M. Grundy, M.D., Ph.D., of Southwestern Medical Center, demonstrated that some saturated fatty acids found in meat do not raise cholesterol levels.
- The *A Change of Plate* health professional educational kit was introduced. Designed for dietitians, this kit included the dietary guidelines as part of the flip chart. This kit was distributed to dietitians through a cooperative program with the American Dietetic Association.

1989

- *The Munchsters Talk About Food*, a preschool nutrition education program/kit, was introduced. As of March 1999, more than 134,000 kits have been distributed.

1990's

- The beef industry initiated and expanded research on CLA, a unique naturally occurring fatty acid found in beef. CLA (conjugated linoleic acid) has anti-carcinogenic, anti-atherogenic, and anti-diabetic properities, plus potential to reduce body fat.

1992

- *Food Guide Pyramid* poster was introduced in support of the USDA *Food Guide Pyramid*. The Meat Board was the first organization to create a poster-size version of the pyramid for use by

health professionals and educators, just a few weeks after the *Food Guide Pyramid* was adopted to replace the "Four Food Groups." A mini-poster tear pad was developed to serve as a nutrition education tool to teach about balanced diets and serving sizes. Distribution of the *Food Guide Pyramid* posters and mini-posters continues. As of October 2003, checkoff dollars numbering over one-half million have been invested in the distribution of over12,000,000 copies of the *Food Guide Pyramid*.

- *Lunchpower* introduced, a school foodservice nutrition education program. *Lunchpower* wins the American Dietetic Association **President's Circle Award** for nutrition education.

1994

- A group of researchers led by L.W. Scott at Baylor College in Houston studied the effects of beef and chicken consumption on plasma lipid levels in men with high cholesterol. The results showed that lean beef could be incorporated into low-fat diet plans designed to lower blood cholesterol levels.
- The beef industry believes strongly that nutrition research findings should be extended to those who need and use nutrition information. They include scientists, nutrition and health professionals, the agriculture and food industries, government policy-makers and communicators, the news media, and consumers. Since the purpose of the nutrition research sponsored is to help solve significant problems and improve the quality of human life, *Nutrition Research Fact Sheets* and *Reports* are regularly published and nutrition research findings are incorporated into all information and education programs.

1995

- The National Live Stock and Meat Board and The National Cattlemen's Association joined forces to become The National Cattlemen's Beef Association (NCBA).
- NCBA partnered with an alliance of food industry, health organizations and the government to form the Dietary Guidelines Alliance, which remains operative in 2003. This alliance helps consumers implement the *Dietary Guidelines for Americans*. Alliance members include the American Dietetic Association, Food Marketing Institute, International Food Information Council, NCBA, National Dairy Council, National Food Processors Association, National Pork Producers Council, the Sugar Association, Inc., and the Wheat Foods Council. Government liaisons include USDA, US Department of Health and Human Services, and the Public Voice for Food and Health Policy.

1996

- Studies began to document the value of beef as a source of iron and zinc, two nutrients key to growth and cognitive development.

1997

- The NCBA Board of Directors reviewed the Meat Board's *Statement of Principles* and adopted a similar version, the *Statement of Principles Regarding Nutrition and Health,* a policy statement on the commitment of the beef industry to provide a wholesome, nutritious food and to communicate accurate science-based information about beef's nutritional qualities and the role of beef in a healthful diet.

1998

- Beefnutrition.org website introduced to serve the needs of health professionals and to extend the findings of the nutrition research and education program.

1998-99

- A large long-term, multi-center study to test the effectiveness of lean red meat versus lean white meat in a free-living, real-world situation were published. Lean red meat and lean white meat were equally effective in lowering blood lipids in a NCEP (National Cholesterol Education Program) Step 1 diet. Researchers were from CCCR, University of Minnesota and Johns Hopkins (led by M.H. Davidson).

1999

- (February) Since the beef checkoff began in 1986-87, beef industry organization staffs have filled teacher requests for nearly 1.4 million kits, posters and booklets, with most of these

pieces focusing on nutrition education. These materials have reached about 140 million children from preschool through high school. Some 27 different collateral pieces have been developed at the national level. These include *The Munchsters Talk About Food*, for preschoolers and *Fueled For Flight*, a video kit for 5th-6th grade students.

- Janet R. Hunt, Ph.D., R.D., from USDA completed a study that showed the absorption of both heme and nonheme iron from beef is partly controlled by iron stores. Heme iron from beef is an important source of absorbable iron for people with low iron stores.
- Dr. Clement Ip at Health Research, Inc. and the Roswell Park Cancer Institute showed that CLA feeding during the early stage of mammary carcinogenesis is able to reduce the number of mammary gland preneoplastic lesions.
- Dr. James M. Rippe at the Center for Clinical and Lifestyle Research completed a study which suggested that a hypocaloric diet with lean beef as a major source of protein is as efficacious as a similar diet with chicken as the major source of protein.
- The Dietary Guidelines Alliance, with significant support from the NCBA and the Beef Checkoff Program, launched its *It's All About You* tool kit video program, including the first "Owner's Manual" for the human body.
- NCBA sponsored the *Council for Women's Nutrition Solutions (CWNS),* a panel of women health professionals who share their broad knowledge and expertise in areas ranging from energy / fatigue, weight loss and stress, to children's health, nutrition communications and consumer research. As of 2003*, CWNS* members remain active in all of these activities.

2000

- Dr. D.E. Bauman at Cornell University completed research on the enhancement of Conjugated Linoleic Acid (CLA) in beef discovering information that offers the potential for enhancing the concentration of CLA in beef products.
- Dr. Carol Lammi-Keefe at the University of Connecticut completed a study on dietary beef as a source of CLA during pregnancy and lactation.
- Dr. D.K. Layman at the University of Illinois completed a study to examine the role of leucine and a moderately higher protein diet on weight loss and glucose homeostasis.
- The first in the series of seven *CWNS* sponsored lifestage tear pads, *Everyday Solutions for Everyday Heroes*, offering health and nutrition tips to busy women, is published.
- An electronic newsletter, *u-mail*, is introduced to provide health professionals and other subscribers with information on a variety of topics – including recent nutrition research findings, counseling resources and free material offers.
- National Cattlemen's Beef Association receives the prestigious **American Dietetic Association Corporate Award for Excellence** for years of commitment to nutrition education and support for dietitians, the American Dietetic Association and the American Dietetic Association Foundation.

2001

- M. Sigman, Ph.D. and C. Neumann, M.D. at the University of California – Los Angeles completed a study on the role of beef in improving growth, cognitive development and health in children.
- *Fit for a Princess*, a Girl Scout patch activity, was published and distributed to help leaders teach Junior Girl Scouts (ages 8 to 11) about the importance of a balance diet and physical activity.
- Three additional tear pads were published: *Relax, Recover, Renew* with tips to help women find balance in their lives; *Eating for 2?* with nutrition tips for pregnancy; and Childhood Nutrition with advice for feeding children 0-5.

2002

- Results of several checkoff-funded studies in collaboration with USDA led to the publication of new ground beef nutrient data for 75% lean, 80% lean, 85% lean, 90% lean and 95% lean by USDA's Nutrient Database for Standard Reference providing consumers information on the ground beef products most commonly available. This data shows that 95% lean ground beef meets government guidelines for "lean".

- A fifth tear pad, *The Fitness Connection*, which emphasizes the importance and lists the benefits of fitness, was published.
- The *Beef Nutrition Backgrounder* was introduced to offer health professionals and health media up-to-date information and the latest research results on beef nutrition.

2003

- The beef industry launched a nutrition advertising campaign to set the record straight about beef's nutrient profile compared to chicken. On average, a 3-ounce serving of six of beef's leanest cuts has only one more gram of saturated fat than skinless chicken breast, and six times more zinc, three times more iron and eight times more vitamin B12.
- The sixth in the tear pad series, *The Tween Scene*, offering nutrition and fitness tips for 8- to 12-year-olds, was published.
- Dr. W.W. Campbell at Purdue University published research on the effects of dietary beef on weight-loss induced changes in immune function, indicators of zinc and iron status, and body composition, in older women.
- Dr. Nancy F. Krebs at the University of Colorado Health Sciences Center continues research on the relationship of zinc status to insulin levels in obese adolescents in a weight loss intervention program utilizing higher protein diets.
- Results of analyses of separable lean data for beef at 1/8- Inch external fat trim was published on USDA's Nutrient Database for Standard Reference, Release 16. This new analysis showed that there are at least nineteen cuts of beef that meet government guidelines for "lean."