DEALING WITH MEAT/DIET/HEALTH ISSUES IN THE U.S.

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INTRODUCTION

The National Live Stock and Meat Board (Meat Board) has been in existence since March of 1922. It has existed for those 67 years to enhance the demand for red meat through programs of research, education and promotion. At the time of the organization of the Meat Board, the prevalent folklore was that high-level meat consumption was adverse to one's health. Meat consumption was purported to predispose one to rheumatism, and a high-protein diet was presumed to overload the kidney because of the necessity to split off and excrete the nitrogen radical from any excess of protein consumed. Vegetarianism was very much in "vogue" and the sophistry of vegetarians was adversely affecting the public's perception of the role of meat in the diet, hence reducing the demand for meat. Amidst this atmosphere, the Meat Board came into being, and the purposes set forth in its constitution were to 1) initiate and encourage research in regard to livestock and meat products; 2) disseminate correct information about meat in the diet and its relation to health; and 3) do all things necessary to promote the interests of the livestock and meat industry.

Adopted by the Board of Directors of the Meat Board in January of 1962 was the "DeGraff Report" (1962) in which it is stated that ". . . the basic function of the Meat Board is promotion," defined as creating, strengthening and retaining a favorable attitude toward meat in the collective mind of the consuming public. That report continues, however, stating that "a successful promotion effo cannot function in a vacuum. It nee facts, carefully developed and firmly grounded in scientific tru that they will be persuasive wh presented to thought leaders and discriminating public."

Those three purposes of the Meat Boa remain as relevant in 1989 as th were in 1922. Time does not perm either a thorough historical review the Meat Board's mode of addressi the issues or of its current program Suffice it to say that this present tion will highlight certain activiti conducted over the past 3 or 4 yea as a means of reflecting its approa to the meat/diet/health issues.

MIS-INFORMATION

Equally as important as providing t various audiences with correct i formation is the necessity of refuti mis-information and then providi correct information in place thereo Much of the information current being used as the basis for heal care advice is seriously out-of-dat originating in a time period wh detection/quantification methodolo was less effective than is current true and during a period in whi livestock genetics/management progra were very different than currently the case. Further, our work pla activities required significantly mo energy in that "yesteryear" peri than is true in the modern era. any event, the information being us often does not portray the 80's a 90's "facts" with reference to the u of muscle foods in the diet.

One of the major myths prevalent the U.S. relates to meat "consum tion." Historically (since the ear 1900's) the USDA has reported me consumption on the basis of carca weight. This total quantity divid by the population has been call average annual per capita meat co sumption. To an economist, "consum tion" typically means that the enti moved through the marketplace

fulfilled a human need. Thus carcass weight is a correct and useful term from that perspective. However, a nutritionist typically thinks of "consumption" as being reasonably synonymous with ingestion. Interpretive difficulties arise as one attempts to use the economic term "consumption" as synonymous with "nutritional consumption." We might all be better advised to use the term "ingestion" to indicate "nutritional consumption," thus being more explicit and truly reflecting nutritional concerns. More about this subject later.

MEAT BOARD SCIENTIFIC ACTIVITIES

According to the DeGraff Report (1962), the Meat Board has historically expended about 16% of its budget on scientific activities. The Meat Board does not itself conduct research. Rather it has historically expended about 10% of its budget in research grants to support highly reputable and competent researchers who have interest in conducting research which would be of mutual interest to themselves and to the Meat Board. The scope of Meat Board interests in research is very broad as reflected in the research areas which have been supported and which include: the role of meat in longevity and reproduction, blood regeneration, fat in human health and nutritional well-being, the role of meat as a source of proteins, vitamins and minerals, studies revealing the relative merits of various methods of cookery, etc.

The total scientific activities of the Meat Board, however, go far beyond its research function. **Research** represents the means of discovery of new information or clarification of existing knowledge or partial knowledge. There are two additional functions which can best be done by scientifically trained and competent personnel; namely the **assembly and interpretation** of information derived through research and finally, the **dissemination** of scientific information. Failure to properly perform any of these scientific activities will surely represent a significant functional deficiency for an organization such as the Meat Board.

Thus **research** is not the primary function of the Meat Board, rather it is **promotion**. **Research**, however, provides the ammunition which has given the Meat Board substantial stature among thought leaders and has made its scientific personnel and the Meat Board itself respected members of the scientific community and other thought leader groups. The Meat Board has thus been able to have an impact on both the scientific professional, other thought leader groups and the general public's image of meat and therefore has helped to improve that image.

MEAT BOARD STAFF DEALS WITH RED MEAT DIET/HEALTH ISSUES

In February of 1984, the Board of Directors of the Meat Board adopted the following Statement of Principles in Dealing With Diet-Health Issues. This statement has provided the guidelines which permit the Meat Board staff to function effectively in a wide array of situations.

STATEMENT OF PRINCIPLES
IN DEALING WITH DIET-HEALTH ISSUES

As producers, processors and marketers of the nation's red meat supply, we subscribe to the following principles to guide us in our statements and actions in dealing with the issue of meat's role in the diet:

1. Information we disseminate will be supported by facts and science.

2. We recognize that diet is a common concern to millions of Americans. We recognize that concern as a positive development to assure a healthy nation. We pledge to do our

part to help the American consumer achieve optimum health by providing safe and wholesome products and information to assist the consumer in making informed choices about diet.

3. We believe the attributes of red meat are compatible with the rising consumer interests in good health and weight control. We must carry out communication programs to explain these attributes.

4. Our nutrition messages must be positive--and address whatever myths or misconceptions exist in the public mind about our product. We will devote our energy to the development of the most effective, comprehensive and positive communication programs. We will concentrate on the positive aspects rather than using valuable resources in reacting to each anti-meat statement that may appear in the media.

5. We recognize the changing lifestyle of the American consumer and the array of meat products needed to satisfy the varied elements of today's market. We must understand the changing consumer and the industry must respond with products that meet these new consumer desires. Promotion and communication programs alone cannot build demand. We must have the proper product for the marketplace as well.

6. Because of conflicting advice about diet and health, there is a risk of consumer confusion and uncertainty. We believe that overwhelming scientific evidence points to a diet of moderation and variety. Individuals with specific health concerns that require dietary modification should be diagnosed and have diets prescribed by a physician. We agree with the concept of the dietary guidelines recommending the avoidance of too much fat, sodium and sugar.

   We urge all involved in the development and dissemination of dietary information to proceed with caution, recognizing the consumer's growing skepticism with regard to dietary advice. We must recognize that when we give advice about what to eat or not to eat we are affecting both the quality of life and life itself.

7. We pledge to use these principles in guiding our actions and communications with respect to diet and health issues.

National Live Stock
and Meat Board (1984)

Statement 1 is supported by the historical research posture of the Meat Board. During its 67 year history, the Meat Board has supported well over 600 research/project years typically as a supplemental funder rather than as a primary funder. This effort has not only provided credence to statement no. 1 of the principles, but also provides avenues for membership in the scientific research community. Being recognized and accepted as a part of that community makes it possible to address educational/informational issues in the forum deemed most appropriate by those originating such programs. Further, it permits the most proper way for the Meat Board's scientific personnel to exert influence on the component parts of any forthcoming educational/informational activity.

Over about the past 4 years, the Meat Board has become much more active in supporting Meat/Food Science type research than was previously possible. Statement 2 suggests that the Meat Board will actively support the presentation of "safe and wholesome" products. The Meat Board is currently actively supporting research projects which should reveal a clearer picture of a number of product safety parameters. Providing information with which consumers can be informed about their various food choices is a continuing challenge to the Meat Board staff.

The Meat Nutri-Facts program was prepared by the Meat Board in cooperation with the Food Marketing Institute and the American Meat Institute. It was specifically designed to provide nutrient information to the consumer at the point at which purchasing decisions were being made; namely at the meat counter. It addresses the primary concerns of the consumer in that it portrays a nutrient profile for a cooked lean 3 oz. serving of meat, including calorie content, fat content, Saturated Fatty Acid content and cholesterol content as well as other information such as its content of sodium, protein, iron, zinc, thiamin, niacin, and vitamin B_{12}. The program entails presentation of nutritional profiles for a number of very popular meat cuts; namely, 14 of beef, 11 of pork and 6 of lamb, and converting those profiles to camera-ready materials for use by the retailer in his presentation directly to the consumer. The beef point-of-purchase material that is sent to over 22,000 supermarkets four times per year has Meat Nutri-Facts cards within the p.o.p. material. At least 9 of the top 10 U.S. retailers have adopted this program, which was awarded the President's Circle Award of the American Dietetics Association in October of 1986 for its effectiveness in reaching the consuming public.

Statement 3 is based upon full cognizance of nutrient profiles of all red meats which in turn is based on compositional profiles reported out over the past 5 or so years. The research resulting in more complete nutritional profiles was undertaken by the USDA who received strong encouragement from the livestock and meat industry, including the Meat Board. All red meats qualify as nutritious foods supplying at least 4 major nutrients at levels which satisfy requirements for those nutrients to a greater extent than they supply energy needs. Beef lean, for example, is "nutrient dense" for protein, iron, zinc, riboflavin, niacin and vitamin B_{12} in that it supplies a greater part of the Recommended Daily Allowance for these nutrients than its contribution to energy needs (based on a 2000 kcal diet).

Commencing in 1985 the Meat Board, in cooperation with the American Dietetics Association, introduced a program of active participation in dietitians seminars or "briefings" to purvey current nutritional profiles for red meat as well as actively attempting to correct misconceptions of the amount of meat ingested by the American consumer. A secondary objective of this activity was to further establish the Meat Board as a credible source of nutritional information about red meat. "Official" seminars have been held in conjunction with some 27 different major events over the 3 1/2 years from 1985 to the present time and probably an equal number have been held unofficially. The ADA has regarded these seminars to be of sufficient importance to warrant an hour of continuing education credit for the dietitians who participate in them.

The initiation of an educational program called "A Change of Plate" has been a highly successful venture for the Meat Board. A kit for use by dietitians in conveying messages to their clients, this program has been widely acclaimed by those who have been exposed to it. Beginning in 1987 and continuing through May 1, 1989, at least 12,000 such kits have been distributed to professional dietitians.

A total of 19 seminars have been held in which "A Change of Plate" was a featured element with an attendance figure of more than 4,000. Estimates indicate that more than 14 million consumers are counseled using "A Change of Plate" kit every year. The kit contains step-by-step instructions, photographs, flip charts, worksheets and 3-dimensional models of meat. Information presented includes that required to permit consumers to consume red meat while reducing dietary fat and calorie content in their meat choices. "A Change of Plate" earned a first place award in the "Influence Materials" category in the National Agri-Marketing Association (NAMA) competition April 23, 1989. It also was one of eight programs, of the 932 entered, to be named a NAMA "Best of Show" finalist. Then in May, 1989, the Health Sciences Communications Association (HeSCA) picked "A Change of Plate" for its "Best of Show" award during its annual meeting in St. Louis. It topped the print campaign category before being named the best of more than 400 entries in the annual competition.

Statement 4 indicates that the Meat Board will address "myths" or "misconceptions" that exist in the minds of the public about red meat in the diet. One of the major "myths" about meat consumption which has been addressed by the Meat Board (Breidenstein & Williams 1985) deals simply with the amount of red meat ingested. The widely held perception is that Americans eat far more red meat than is healthy for them. This perception is held by a large proportion of very important thought leader groups and has led to the recommendation by a number of health care professionals that the American public "avoid" red meat and switch instead to poultry or fish. Dietary variety is recognized by the Meat Board as a desirable objective, not only to avoid monotony, but to enhance likewise the probability of satisfying nutrient needs. Thus the recommendation to include fish and poultry as dietary components must be applauded. When, however, purpose of such "switching" is reduce dietary cholesterol or to min mize either total dietary fat or sa urated fatty acids, then the Me Board would properly contend that su objectives could be met with appreci bly less constraint on food choice Red meats both can and should remain part of the general American die For example, beef is a premiere sour of dietary iron, and pork is a pr miere source of thiamin.

Expressing beef and pork consumpti on various bases is helpful in asses ing the various indicators of red me consumption (Breidenstein & Willia 1985). This is shown in Table Using carcass weight as the basis f estimating consumption, thus rath dramatically overestimates ingestion

Statement 4, that "our nutrition me sages must be positive," deserves so comment. Given the current U.S. d etary scenario, it is difficult derive a true "positive" statemen about high fat foods in the red me supply. We have passed from a nati concerned about dietary deficiencie to one which is often obsessed wi the perception of over-consumption food. Different levels of concer probably exist in other develop countries as well with regard to die ingestion.

A most important point that should raised is that those who hold to t concept of "good" food or "bad" fo should replace that perception wi "good diet/bad diet." Any wholeso food can fit into any rational die In the above scenario, higher f foods should be monitored by consume to insure that they conform to the particular dietary needs. As an exam ple only, braised lean and fat fr spare ribs contain about 30.3% t lipids (Anderson 1983). Thus t concerned consumer might very we conclude that this ingestion of th food should be carefully monitore controlled. The next question th needs to be addressed, however, is t

amount available in the food supply and its contribution to food ingestion. The arithmetic exercise in Table 2 demonstrates an approach through which such a question can be addressed.

If one were to isolate spare ribs from the remainder of the diet and were to ignore its prevalence in the food supply, one might very well make an inappropriate decision to eliminate them from the diet. However, one does not get overly concerned upon going through that arithmetic exercise because one concludes that an 8 oz. raw serving of spare ribs could be a food choice for Americans on the average only once every 80 days. If one assumed that "spare rib eaters" constituted only 52.5% of the population, then this ingestion could occur only once/ 6 weeks. It would at that eating occasion constitute about 141 g of raw soft tissue or about 80 g of cooked soft tissue (lean and fat) and would contribute a total of about 24 g of fat to the person's diet for that specific day (about .6 g average per day or 5.4 kcal). Hardly sufficient cause to become highly concerned about the exclusion of spare ribs as a dietary component for the general public.

Statement 5 indicates recognition by the Meat Board of the evolving needs of the marketplace. The need to modify and improve upon meat products, to retain eating qualities while improving upon the "fit" of red meat with nutritional needs of the consumer to make it more convenient to use, all are high on the list of important traits for meat. Support of meat science research projects by the Meat Board and by its related entities, the National Pork Board and the National Beef Board are evidence of the seriousness with which the industry views those marketplace needs.

Statement 6 represents a philosophy to which the Meat Board subscribes in that dietary variety and moderation represent some of the most time-honored wisdom that remains as appropriate today as it was 50 years ago. The Meat Board seems committed to providing consumers with information which permits them to adhere to dietary guidelines while imposing minimal constraints on their food choices. The statement also recognizes diet as a highly individual matter and supports the concept of avoiding too much dietary fat and sodium.

The strict adherence to dietary guidelines represents certain challenges to the unlimited inclusion of red meat in the diet. Those popular guidelines (USDA 1986) which provide the basis for such challenge are the following:

1. Not more than 30% of kcals from fat

2. Not more than 10% of kcals from Saturated Fatty Acids

3. Not more than 300 mg/day of cholesterol

4. Maintain sodium intake at not more than 3300 mg/day.

One might then add one's personal lifestyle/eating pattern in order to establish one's "allowance" for muscle foods. One could limit the intake of dietary fat and Saturated Fatty Acids to be derived from muscle foods to 26% of the daily total "allowed" and could further decide that a single main-meal eating occasion could provide 75% of the total daily allowance from muscle foods. One further defines the continuation of one's meat preparation/ eating pattern by cooking muscle foods essentially as purchased but to remove and exclude trimmable fat tissue after cooking, thereby limiting one's ingestion to the cooked "lean" portion only.

Table 3 shows the daily average kcals and grams "allowed" to originate from either total dietary fat or SFA's (Saturated Fatty Acids). Table 4 shows the nutrient profiles of various

red meat items according to the USDA (Anderson 1983 & 1986). From Tables 3 and 4 one can then generate the information presented in Table 5.

An 85 g serving of cooked edible lean tissue is generally considered an adequate serving of muscle foods. Twice that size would be considered by most to be a most generous single serving. Consumers who need to adhere closely to the currently popular dietary fat limit should recognize that while grade in beef is important, the specific cut exerts more influence on kcals originating from fat than does grade. For example, from the perspective of SFA's as the limiting criterion, one would be "allowed" to eat only 35% as much braised Choice Chuck Blade Roast as broiled Choice Top Round Steak while one could eat 80% as much broiled Choice Top Loin Steak as broiled Select Top Loin Steak. For all the fresh beef cuts, SFA's are the primary constraint to ingestion and of those listed, only braised Chuck Blade Roast imposes any significant ingestion constraint.

In the case of extra lean ham slices, there is no significant constraint on consumption, although one might be well advised to recognize its sodium content and make the appropriate "trade-offs" as required. One of the most maligned processed products in the U.S. is the frankfurter. Consumption of a single 10 to the pound "frank" (a common weight in the U.S.) reflects a weight of about 45 g/frank. Thus consumption of a single frank would be the maximum to be ingested while complying with total fat and SFA maximas. Neither sodium nor cholesterol should pose any significant consumption constraint for the vast majority of consumers.

SUMMARY

In interfacing with the Meat Board, one should be ever-mindful that its primary purpose, and reason for being, is to be an advocate for red meat consumption. In short, the Meat Board is a "promoter" of red meat. Referring once again to the DeGraff Report (1962), it states, however, that successful promotion effort cannot function in a vacuum. It needs facts carefully developed and so firmly grounded in scientific truth that they will be persuasive. . . ." One could expand upon that statement by declaring that those "truths" must be characterized and declared to be truths by the appropriate professional scientific community, not solely by the "promoter." This recognition of the scientific credibility of the bases for promotion absolutely must be widely accepted, especially by those scientists who are asked to be spokespersons for the Meat Board or its programs. There must be no conflict between the scientist's perception of scientific truth and that of the Meat Board or its staff.

All this might suggest that the Meat Board must be rendering opinions only on issues for which the scientific information has been properly reported to the scientific community, such as in peer-reviewed journals. There will be important questions raised, however, for which the "scientific jury is still out." Such questions require good, sound scientific background but the answers given will be speculative. That approach is deemed perfectly suitable provided it is declared to be speculative at the time of its presentation.

The Meat Board has been able to retain its credibility by holding steadfastly to scientifically supported facts with regard to the dietary role of red meats. Its success in the future, especially its cost effectiveness and its "reach" by acquiring the scientists as spokespersons in public pronouncements, will be sharply enhanced by continuing that approach.

Finally, the Meat Board's critics will be expecting bias from its staff because of its declared promotional thrust. To prove absence of the undue bias will require the Meat Board

always be unequivocally and firmly on the side of scientific truths.

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Table 1

Bases for Expressing
Annual Per Capita "Consumption"

Bases for assessing "consumption"	1984 "Consumption" g/day	
	Beef	Pork
Carcass	132	82
"Retail" weight	98	77
Boneless fresh retail	85	NA
Cooked edible portion - fresh	54	10
To processed meat	13	35
Total ingested	67	45

Table 2

Spare Ribs and Components Thereof
Available in the U.S. in 1987

Total Spare ribs -- millions of kg

Raw, including bone		254.3*
Raw, soft tissue	(0.62** x 254.3) =	157.65
Braised, soft tissue	(0.57** x 157.65) =	89.86

Average Per Capita (1987 U.S. pop. was 243.4 million*)

Annual - cooked soft tissues, g	(89,860 ÷ 243.4) =	369
Annual - lipids provided, g	(.303** x 369) =	111.8
Daily - lipids provided, g	(111.8 ÷ 365) =	.31
Daily - kcals from lipids	(9.02 g** x .31) =	2.8

* Derived from AMI (1988)
** Anderson (1983)

Table 3

Dietary "Allowance" For Total Fat and SFA's

Elements Imposing Constraints	Totals "Allowed" To Originate From			
	Total Dietary Fat		Saturated Fatty A	
	kcals	g	kcals	g
Total Dietary Fats/SFA's	600	66.5	200	22.
Daily Dietary Fats/SFA's Originating From Muscle Foods	156	17.3	52	5.
Dietary Fats/SFA's Originating From Muscle Foods at a Single Main-Meal Eating Occasion	117	13.0	39	4.

Table 4

Relevant Nutrient Profiles of Various Red Meats
Components/100 g

		Processed Meat		Fresh Beef			
		Beef & Pork Frank-furter	Extra Lean Ham Slice	Select Top Loin Steak Broiled	Choice Top Loin Steak Broiled	Choice Top Round Steak Broiled	Choice Chuck Blade Roast Braised
al		320	131	190	207	194	275
otein	g	11.28	19.35	28.62	28.62	31.69	31.06
pids	g	29.15	4.96	7.54	9.46	6.45	15.80
rbohydrates	g	2.55	.96	----	----	----	----
A's	g	10.76	1.62	3.02	3.76	2.26	6.44
dium	mg	1120	1429	68	68	61	71
olesterol	mg	50	47	76	76	84	106

Table 5

Amount (g) "Allowed" With Constraints Imposed By

Muscle Food	Total Fat	SFA's	Choles-terol	Sod
	g "Allowed"			
Fresh Beef				
Ch * Top Round Steak Broiled	202	190	357	N
Select Top Loin Steak Broiled	172	142	395	N
Ch * Top Loin Steak Broiled	137	114	395	N
Ch * Chuck Blade Pot Roast Braised	82	67	283	N
Processed Meat				
Extra Lean Ham Slices	262	265	638	2
Beef & Pork Frankfurters	45	40	600	2

* Ch = U.S. Choice