

DECREASED RED MEAT CONSUMPTION IN ENGLISH SPEAKING COUNTRIES: A POSITIVE OR NEGATIVE EFFECT ON HEALTH?

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ABSTRACT

There are those who believe that the human is genetically programmed to eat diets high in red-meat content. Eaton and Konner (1985) conclude that preagricultural peoples derived 35% of their calories from meat. Harris (1986) stated that despite findings that link the overconsumption of animal fats and cholesterol to degenerative diseases, animal foods are more critical to sound nutrition than are plant foods. Although many consumers are presently avoiding animal fat, they should not make the nutritional mistake of reducing consumption of animal foods. Rather than giving up the entire animal-protein package, modern man should prudently trim fat from meat. It will never be in the best interest of any country for their population to eat less animal protein as a health measure.

PROTEIN FAT MEAT HEALTH CHOLESTEROL CALORIES

When heart disease became a threat to English speaking countries of the world, the fat in red meat was blamed and consumption decreased. This widely publicized concept remained constant until recent research revealed evidence to the contrary. These misconceptions concerning fat content of red meat reflected data gathered in the 1950's when three very fat steers were butchered and entire carcass disappearance figures including bone, fat, and gristle were reported to U.S.D.A. This meat composition study provided the data for the meat portion of handbook 8. The information provided to U.S.D.A. for incorporation into food composition tables, as printed in medical books, and utilized by associations as guidelines for consumers on calories, fat and cholesterol. The decreased fat content of the meat resulting from genetic selection, the trimming of fat by the retailer, and the fat removed by the consumer after cooking has now reflected a very different picture of the fat consumed from red meat. See graphs 1-5.

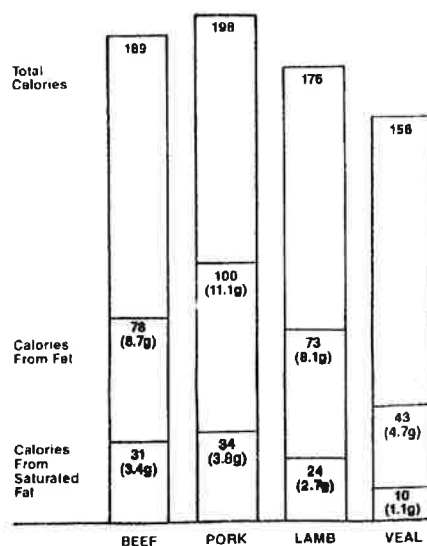
A recent survey of meat retailers by Savell et al. (1988, unpublished data) revealed that a quarter-inch trim has recently been decreased to eighth-inch and that trimmable fat has been decreased 27% and the relative fat content of ground beef has decreased by 33% since 1986. Revised U.S.D.A. nutrient data on pork and beef, and the garbology research of Rathje (1987) suggests that at least 50% of the external fat on beef is trimmed-off and not eaten by consumers. It was concluded from the latter study that Americans, on the average, consumed 26% less fat from retail cuts of beef and pork in 1987, than was consumed ten years ago.

Animal proteins contribute significantly to the total nutrients of the food supply in English speaking countries. Meat is a primary source of vitamins B-6, B-12, niacin and riboflavin; of the minerals iron, and zinc; and of proteins and calories. See graph 4. The Committee on Medical Aspects of Food Policy (1984) in the United Kingdom states that meat and meat products are foods for which alternative forms with lower contents of saturated fatty acids and fat are now available as a result of changes in husbandry or in manufacturing processes.

Beef consumption accounts for only about 9% of the fat, 13% of the saturated fatty acids, and 12% of the cholesterol in the average diet. Less than half of the fatty acids in beef fats are saturated fatty acids. Vegetable oils

Graph 1

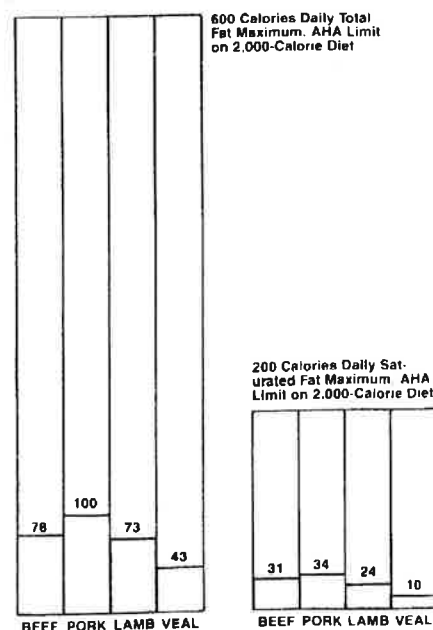
Total calories per 3-oz. cooked, trimmed serving of beef, pork, lamb and veal. How many of those calories come from fat? How many come from saturated fat?



Beef data from *Composition of Foods, Beef Products, Raw, Processed, Prepared*, U.S. Department of Agriculture Handbook No. 8-13, USDA Human Nutrition Information Service, Washington, D.C., 1986. Pork data *Composition of Foods, Pork Products, Raw, Processed, Prepared*, USDA Handbook No. 8-10, USDA Human Nutrition Information Service, Washington, D.C., 1983. Lamb data "Nutrient Composition of Lamb of Two Age Groups" by K. Ono and colleagues *Journal of Food Science*, Sept/Oct 1984. Veal data "Nutrient Composition of Some Fresh and Retail Cuts of Veal," by K. Ono and colleagues *Journal of Food Science*, Sept/Oct 1986.

Graph 2

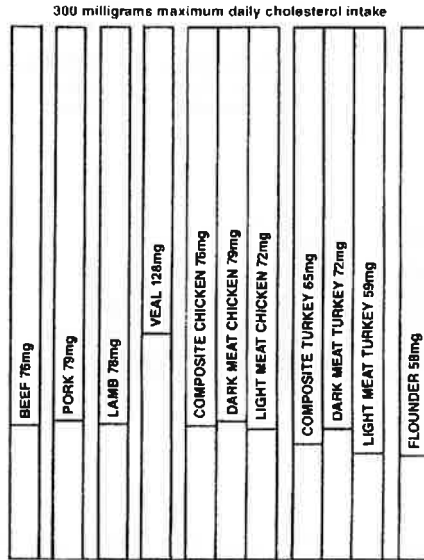
Dietary fat. If a 2000-calorie diet may contain no more than 600 calories from total fat and fewer than 200 calories from saturated fatty acids, how many of those calories would be supplied by one 3-oz. serving of beef, pork, lamb or veal?



Data sources: See Graph 1

Graph 3

Dietary cholesterol. If a maximum cholesterol intake is 300 milligrams per day, how much of that upper limit is provided by 3-oz. servings of beef, pork, lamb, veal, chicken, turkey and flounder?

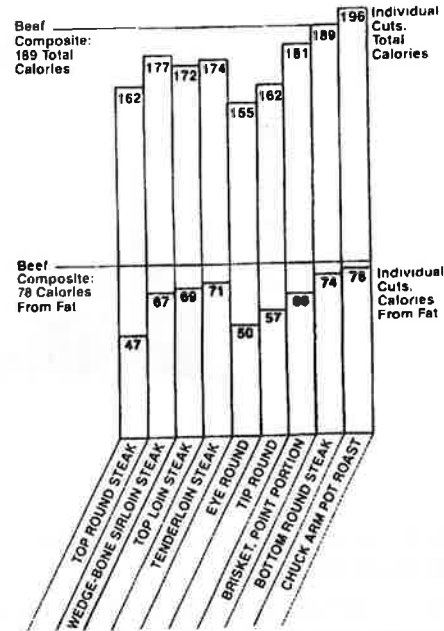


Beef, pork, lamb and veal sources: See Graph 1. Chicken and turkey: *Composition of Foods, Poultry Products, Raw, Processed, Prepared*, USDA Handbook No. 8-5 Human Nutrition Information Service, Washington, DC, 1979. Flounder (flatfish): *Composition of Foods, Fish and Shellfish Products, Raw, Processed, Prepared*, USDA Handbook No. 8-15 Human Nutrition Information Service, Washington, DC, 1987.

Going the recommendations one better: 19 retail cuts of beef, pork, lamb and veal that are lower in fat than the composites.

Graph 5

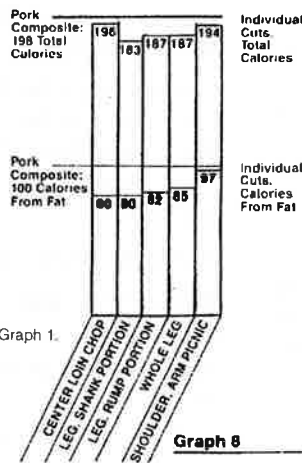
Nine beef cuts.



Data source: See Graph 1.

Graph 6

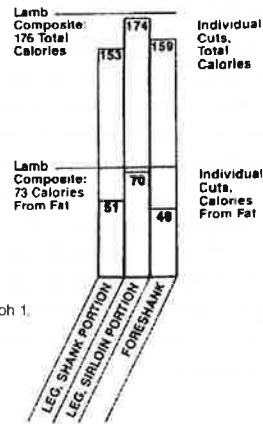
Five pork cuts.



Data source: See Graph 1.

Graph 7

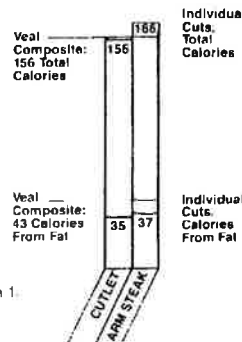
Three lamb cuts.



Data source: See Graph 1.

Graph 8

Two veal cuts.

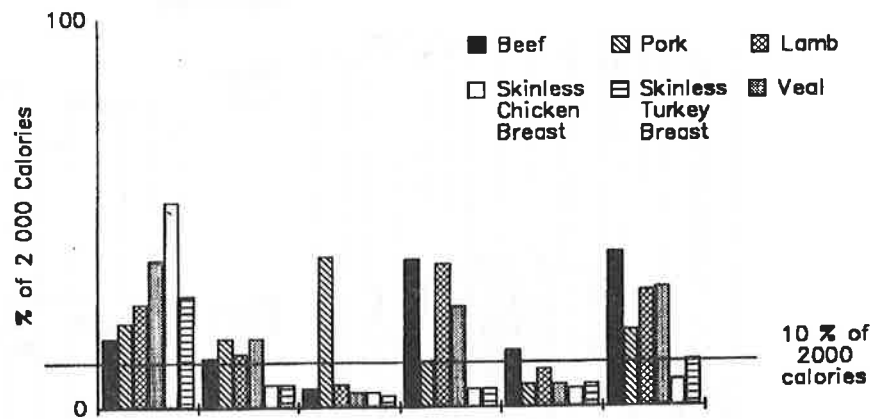


Data source: See Graph 1.

Graph 4

Nutrient density. What percent of the U.S. RDA for selected nutrients can be contributed to the diet by 3-oz. servings of foods which contribute less than 10% of a 2,000-calorie daily food intake?

Foods: Beef, pork, lamb and veal, composites of all retail cuts, cooked, fat trimmed, chicken and turkey light meat, both roasted, skin removed
Data sources: See Graph 1 and Graph 3



contribute 4 times as much total fat, and twice as much of the saturated fatty acids, as beef.

In Australia, Sinclair and O'Dea (1987) found little obvious marbling in beef samples, in contrast to U.S. data where marbled beef is common. Although grain-feeding is often associated with production of marbled meat, the Australian researchers report that grain-feeding of cattle less than two years of age can result in meat indistinguishable from grass-fed beef on the basis of intramuscular lipid content.

There are consequential differences among fatty acids assigned to the "saturated" group. Grundy and Bonanome (1988), suggest that stearic acid (abundant in beef fat) has been found to lower rather than raise serum cholesterol levels. These findings may explain why, when researchers have put human subjects on red meat exclusively, there has been no increase in blood cholesterol. Thus, consideration of beef fat as "saturated" (in terms of its effect on plasma cholesterol) appears unwarranted. Similarly, characterization of vegetable versus animal fats/oils in media advertising are inaccurate and misleading.

For most of mankind's history, consumption of red meat may have been as much as ten-times that currently consumed in English speaking countries. Animal proteins are more critical to sound nutrition than are plant foods. Rather than giving up the entire animal protein package, modern man should prudently trim fat from meat. It will never be in the best interest of any country to eat less animal protein as a health measure.

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