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Fats and Cholesterol

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family living topics



Fats and Cholesterol

Fats and cholesterol have been getting lots of publicity these days. With heart disease ranking as the leading cause of death in the United States lots of attention has been given to fats and cholesterol as potential factors associated with the cause of the disease. While fats and cholesterol may be related to coronary heart diseases, they are both natural components of the body and have very important functions for the body's good health. Nearly fifty percent of the average daily intake of calories comes from fat. Fats come from five main sources: meats, baked goods, dairy products, eggs and table and cooking fats.

What are fats?

Fats are the second biggest source of energy for the body. Fats and oils may also be called lipids. There are many kinds of fats that come from both plant and animal sources. Fats may be visible, or ones that we easily recognize, such as butter, margarine, oil, bacon and cream. Invisible fats or hidden fats occur frequently in many foods such as eggs, milk, olives, avocados and nuts.

What do fats do?

Fats are very important for the overall good health of the body. Fats are energy sources for the body. They are the most concentrated source of energy and provide 9 calories for each gram. This is 2 1/4 times as many calories as we get from carbohydrates and protein which provide 4 calories per gram.

Fats provide essential fatty acids that the body needs but cannot manufacture. These fatty acids are essential for growth. Fat provides a carrier for the fat-soluble vitamins A, D, E and K. Without fat, these vitamins could not be used in the body.

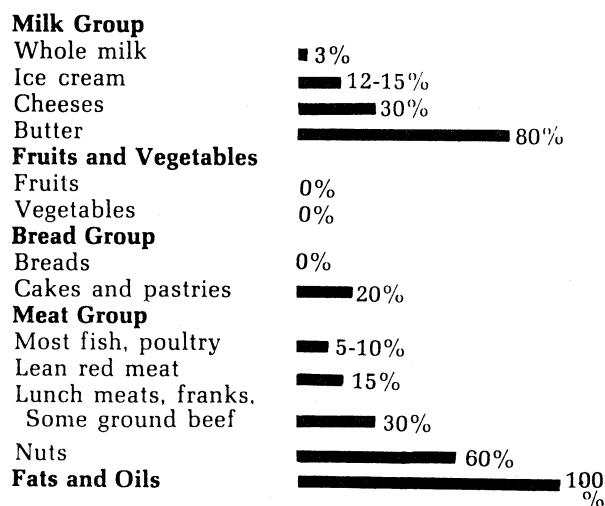
Fat also provides satiety or "staying power" in the diet. They digest slowly and stay in the stomach longer to

keep the body from feeling hungry and give the body a more constant source for long-time energy.

Fat also adds flavor, aroma and variety to the diet.



SOURCES OF FATS



Saturated or Polyunsaturated

You can hardly turn on a television or radio, read a newspaper or magazine without seeing or hearing about the value of a certain margarine or oil. The ads suggest you try one brand instead of another because of the amount of saturated vs. polyunsaturated fats. These advertisements can be misleading and confusing.

A saturated fat is one in which all the chemical bonds are filled. Saturated fats are found mostly in animal fats, coconut oil and olive oil and are usually solid or hard at room temperature. Saturated fats include the fats found in beef, lamb, pork, lard, and dairy products containing butterfat and egg yolk. Veal, turkey, chicken and most fish contain mainly saturated fats but they are lower in total fats and so are lower in saturated fats.

Do you wonder why vegetable shortenings are solid at room temperature? That is because they have undergone the process known as hydrogenation. This is a process in which hydrogen is added to the liquid oil. Hydrogenation hardens the oil, makes it saturated and increases the storage life of the product. Hydrogenation increases the saturation of the fat.



Coconut oil, olive oil, and palm oil are the three vegetable oils that are saturated rather than unsaturated fats. Coconut oil is highly saturated, about 1½ times as saturated as butterfat. Many of the "non-dairy" milks, creamers, toppings and cream fillings for pies and cookies are made with coconut oils. Utilizing these products can increase the amount of saturated fats in the diet.

Chocolate is another source of saturated fat that is of vegetable origin. Any variety of chocolate including baking chocolate, German sweet chocolate, chocolate chips and chocolate candies are examples of saturated fat. Powdered cocoa has had the fat removed so it is not a saturated fat.

Reading the label is very important especially if you are on a special diet. If you are limiting saturated fats on your diet keep in mind the terms hydrogenation and coconut oil - both indicate saturated fat.

A polyunsaturated fat is one in which the chemical bonds are not all filled. It occurs mainly in the liquid form and is of plant origin. Such oils included corn, soybean, cottonseed, safflower, sesame seed and sunflower seed. Peanut oil is also polyunsaturated but to a lesser degree than the other oils.

What is cholesterol?

Cholesterol is a chemical substance which occurs naturally in the body. The body obtains cholesterol in two ways, by foods eaten and by cholesterol that is manufactured by the body.

Cholesterol occurs only in animal foods. Brains are the richest source of cholesterol. Other foods high in cholesterol include organ meats, egg yolks and shrimp. Meats, whole milk, ice cream and other animal products also contain cholesterol.

Foods of plant origin such as fruits, vegetables, cereal grains, legumes and nuts do not contain cholesterol.

What does cholesterol do?

Cholesterol is a natural constituent in the body and has several important functions. It is present in nearly all cells but is found in the highest concentrations in the liver, the adrenal glands, the brain and the nerves. Cholesterol is used for the synthesis or making of sex hormones (estrogen, androgen and progesterone); it helps transport certain dietary fats that the body needs for good health; it is a part of the skin; it is a part of the covering of nerve fibers; and it is converted by the body, with the help of ultraviolet light from sunshine, into vitamin D.

Normal serum cholesterol values for adults range from 150 to 250 milligrams per 100 milliliters of blood. There are individual differences and high levels should be determined by one's physician.

SOURCES OF CHOLESTEROL

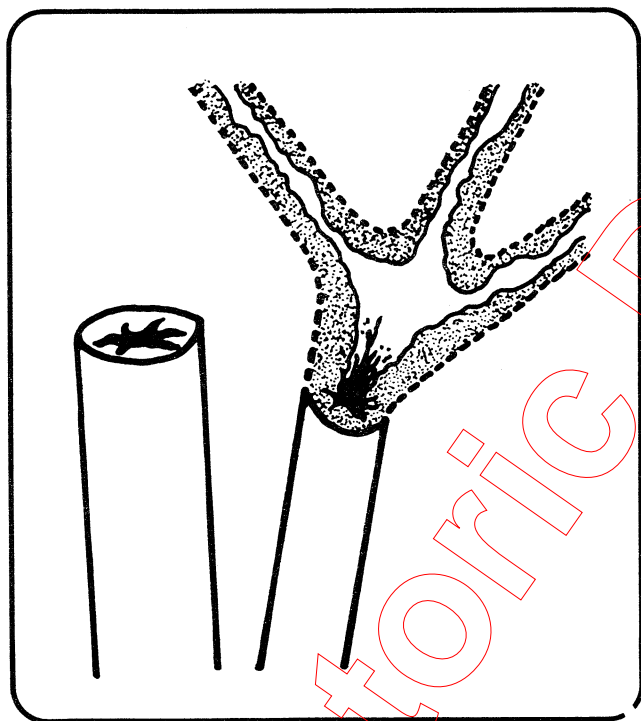
Food	Amount	Milligrams Cholesterol
Brains	3 oz. raw	more than 1700
Kidneys	3 oz. cooked	680
Liver	3 oz. cooked	370
Egg	1 yolk or 1 egg	252
Heart, beef	3 oz. cooked	230
Shrimp	3 oz. cooked	130
Lamb, veal		
crab	3 oz. cooked	85
Beef, pork,		
chicken	3 oz. cooked	75
Butter	1 tablespoon	35
Milk, whole	1 cup	35
Cheddar cheese	1 oz.	34
Ice Cream	½ cup	27
Cream, ½ & ½	¼ cup	26
Cottage Cheese	½ cup	24
Cream, light	1 oz.	20
Lard	1 tablespoon	12
Milk, skim	1 cup	5

From: Cholesterol Content of Food:
Journal of American Dietetic Association
61:134-148, 1972

Diet and Coronary Heart Disease

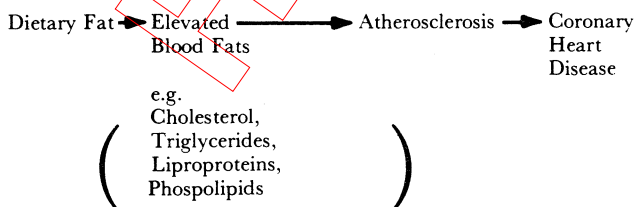
Coronary heart disease is a major health problem in the United States today. Cardiovascular disease accounts for about 54% of all deaths in the United States. The cause of these disease conditions are not known but there are several risk factors or characteristics which increase one's chance of heart disease. These risk factors include elevated levels of blood cholesterol and triglycerides, elevated blood pressure, cigarette smoking, lack of exercise, overweight and diabetes.

The process most common to heart disease is atherosclerosis or "hardening of the arteries." This is the condition in which the small and large arteries narrow and harden. The process, which takes many years, is due to deposits of fatty materials and minerals along the inside walls of the arteries. This deposit is called plaque and may eventually build up to the point that the blood supply is completely shut off. This closing off of an artery shuts off the oxygen supply to the heart muscle and causes a "heart attack."



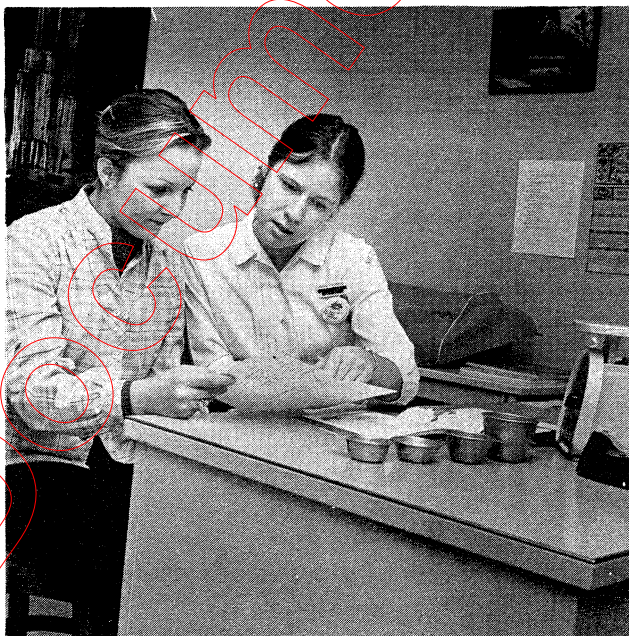
Atherosclerosis causes blood vessels to narrow and harden.

The relationship between fat and atherosclerotic disease has been depicted in the following manner:



There is currently much controversy as to the treatment plan for one with coronary artery disease. Within the scientific community, there is a split of opinion as to whether dietary modifications can prevent or improve atherosclerotic heart disease. This indicates that much further research needs to be done in the area of heart disease. The best plan to follow is one that has been outlined by the Council of Food and Nutrition of the American Medical Association which includes:

1. Do not diagnose your own problems. Follow your doctor's recommendations concerning high blood pressure, lack of exercise, obesity, smoking and stress.



Seek professional nutrition information.

2. Achieve a desirable weight and maintain that weight with adequate exercise. If you have high blood lipid levels, a reduction of your intake of saturated fats and an increased use of polyunsaturated fat should be followed.
3. Watch your eating habits to insure that you are getting enough of the different nutrients supplied by food.

In terms of the actual foods eaten, what changes are necessary?

- * Reduce the number of servings of eggs and organ meats.
- * Encourage the use of more poultry, fish, and veal in place of highly marbled beef, pork and lamb.
- * Change preparation methods to baking, broiling and boiling rather than frying.
- * Use skim milk and skim milk products rather than whole milk and whole milk products.
- * Reduce the consumption of rich or high calorie foods, especially those containing saturated fats.

- * Use spread and cooking oils from polyunsaturated sources rather than saturated sources.

Remember that fats and cholesterol are necessary components for the normal functioning of the body. If your physician does suggest modifications in these two nutrients the diet does not need to be difficult to follow. Three words of advice: (1) Follow your doctor's recom-

mendations, (2) learn the food sources of saturated, polyunsaturated fats and cholesterol, and (3) read labels so that you will know what components are in the food products you buy.

Fats and cholesterol, in moderate amounts, are not villains but support the interworkings of your body. Without these nutrients, we would cease to function.

REFERENCES

1. *Fats in Food and Diet*, USDA, AIB No. 361
The risk factors associated with the development of atherosclerosis and coronary heart disease are discussed. Moderation in the total amount of fat in the diet and maintaining desirable weight is discussed in relation to health at every age. Tables of the fat and cholesterol content of selected foods are given. Revised 1976. Cost: \$0.30.
Superintendent of Documents
U. S. Government Printing Office
Washington, D.C. 20402
2. *The American Heart Association Cookbook*, Third Edition, 1979, David McKay Co., Inc., New York
This cookbook is the most complete up-to-date collection of recipes and information for promoting heart health. The recipes state calories/serving. It provides shopping tips, cooking tips, dictionary of herbs and spices, how to adapt your own recipes, information on eating out and packing lunches and a fat-cholesterol chart.
3. *Closeup on Sodium and Hypertension*, HE-150
Current information about sodium and high blood pressure is included. References for following low-sodium diet are given.

Historical Document