



## *Dietary Fat and Human Health: Current Recommendations*

Interest in the possible role of dietary fat in atherogenesis has served as a stimulus to intensive research in lipid metabolism. This focus on lipids has brought an awareness of the paucity of information concerning the role of fat in nutrition and health. Recent research has uncovered many interesting findings but data are far from complete and are often conflicting. Misconceptions are common and hypotheses and opinions are frequently confused with facts.

Dietary fat has not been proved to be etiologically related to atherosclerosis and coronary artery disease. Available evidence suggests rather that disorders of fat transport and metabolism may have an important role in the atherosclerotic process. However, there seems little doubt that multiple factors influence atherogenesis including heredity, mechanical and hormonal factors, possibly nutrients other than fat and disorders of the blood clotting mechanism.

Studies in experimental animals and in man have shown that, among other factors, the amount and type of dietary fat can influence serum lipid levels. An association between elevated serum lipid concentrations and atherosclerosis has also been observed. However, that reduction of serum lipids will prevent or reverse atheromatous changes in human blood vessels remains to be demonstrated. The mechanisms by which serum lipid concentrations change in response to variations in dietary fat remain largely unknown.

We do not know the amount or the types of fat which should be included in the diet to insure good nutrition and health. Recent research makes it obvious that fat can no longer be considered as an entity and that attention must be paid to specific lipids and their components, i.e., fatty acids (including

chain length, degree of saturation and isomerization), sterols, phospholipids and even minor constituents of the triglycerides which constitute the major source of dietary fat. Certain polyunsaturated fatty acids, linoleic, linolenic and arachidonic, have been found to be dietary essentials in many animal species. Presumably these acids are essential in man but such has not been demonstrated unequivocally. The metabolic role of the essential fatty acids has not been elucidated although some evidence suggests a function in the transport of fat. This has led to the hypothesis that essential fatty acid deficiency may play a part in the pathogenesis of atherosclerosis. Much investigation will be required to prove or disprove this interesting theory.

In spite of the many unknowns, the physician has the responsibility of advising his patients as to diet, including the quantity and kinds of fat to be included. Certainly some fat is indicated. Fat is a concentrated source of energy, exerts a protein-sparing action, contributes palatability and satiety to the diet, and assists in the utilization of the fat-soluble vitamins, which are also supplied by certain fats.

In view of the limitations of present knowledge, it seems unwise to suggest any major change in the dietary pattern of healthy persons. A good, varied diet that avoids caloric excess should be recommended as the basis for good nutrition. In the control of obesity, some restriction of fat intake is usually indicated in view of the high caloric value of fat. In diseases in which hyperlipemia is a feature, dietary therapy should be directed toward lowering lipid levels. In patients with coronary artery disease or with other manifestations of atherosclerosis,

it may be desirable to limit total fat intake or to increase the intake of unsaturated fats as an experimental therapeutic procedure. Such therapy should be followed and evaluated carefully, using both clinical and laboratory observations. Much can be learned by therapeutic studies that are well controlled and continued for long periods of time.

Encouragement of basic and clinical research in all phases of lipid metabolism is

highly desirable so that answers to many unsolved problems can be obtained and the role of dietary fat in human health can be delineated with precision.

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### *Once Upon a Time*

“Once upon a time there was a very poor country, where nobody had enough to eat and the average expectation of life was 24 years. There was also a very rich country, where everybody had plenty to eat and the average expectation of life was 64 years. In the very rich country people used to save up milk and butter and cream and eggs and send them to the very poor country, where they were distributed, especially to the children, who would otherwise have had none. In this way the expectation of life in the very poor country was raised from 24 to 27 years. Meanwhile the expectation of life in the very rich country was rising too, and went up from 64 to 67 years, and everyone who didn't die of cancer of the lung from smoking too many cigarettes died of coronary thrombosis. Then someone discovered that coronary thrombosis was due to eating and drinking too much milk and butter and cream and eggs in the very rich country, and sent it all to the very poor country, so that the expectation of life in the very poor country might be raised high enough for them to start dying of coronary thrombosis so that they, too, could stop eating and drinking milk and butter and cream and eggs.”

—A Running Commentary by Peripatetic Correspondents. *Lancet* 18: 635, 1956.

