



Newsletter

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CHOLESTEROL – FAT - PROTEIN

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There is still controversy regarding the consumption of proteins containing saturated fats and cholesterol, and their relation to cardiovascular disease.

In reality, there is no clear-cut evidence showing that the recommendation for the drastic reduction in saturated dietary fat and cholesterol intake is justified. It has been stated that, "The decline in cardiovascular heart disease death rates in the U.S.A. in the past 20 years is as remarkable and as welcome as it is unexplained. It can hardly be due to the efforts of the National Cholesterol Campaign, set up long after the rates began to fall."(1)

In fact, the Scottish Heart Health Study found that cholesterol concentrations vary little across their country, but the level of cardiovascular heart disease varied considerably.(2)

Is Lowering Fat and Cholesterol Intake Safe?

Should severe restriction of dietary fat and cholesterol be suggested to the general population? This question is now surfacing in the scientific community around the world. In individuals with coronary heart disease, a reduction may be justified. However, researchers are finding that these same individuals are at risk for other life threatening conditions when their dietary fat and cholesterol intake are restricted.(3)(4) Present data is showing that total mortality is unchanged when hypercholesterolemia is lowered. In fact, even when cholesterol reduction seems to be warranted and there is a reduction in cardiac mortality, there are corresponding increases in non-cardiac deaths.(5)(6)

This and other studies are concluding that the general recommendations for everyone to reduce their fat intake are premature. Concentrating lipid- lowering efforts only on those people having the highest fat concentrations is probably the most prudent.

Fats - Saturated and Unsaturated

A recent article in "*Scientific American*"(7) began with the question, "Does margarine really lower cholesterol?" Butter, as everyone knows contains saturated fats and supposedly raises cholesterol levels.

A nutritionist at the University of Missouri, performed a study involving 71 faculty members. Over an extended period of time the group consumed butter and then switched to margarine. Their blood was monitored throughout the study. Her conclusion was, "basically it made no difference whether the individuals ate margarine or butter."

Other studies have shown similar findings. A five-year study of over 2,000 middle-aged men in Great Britain was conducted by the Medical Research Council's Epidemiological Unit in

Cardiff. The report shows that men who consumed margarine are as much at risk of ischemic heart disease as those who use butter.(8)

In the 1950's, Norway undertook a cholesterol-lowering regime, which was tracked for 20 years. The study involved replacing butter with soya margarine and soya oil. Over the course of the study there was a "steep and continuing rise" in deaths from coronary thrombosis.(9)

Solof and Schwarts at Temple University (10) reported on their own studies, which further confirms other researchers. Their investigations concluded that there was no support for the view that coronary disease was due to high saturated fat intake compared to low unsaturated fat intake.

Even with these findings, which are often ignored, the U.S. and Europe have recommended a 30 percent reduction in saturated fat consumption to the population at large. This recommendation in the U.S., by former Surgeon General Dr. Koop, has met with a great deal of criticism.

Saturated Fat and Cholesterol

We have known individuals who have eaten a "meat and potatoes" diet all their lives and yet have not suffered from cardiovascular heart disease. We also know of those people who develop a heart condition even though they eat very limited amounts of saturated fats.

A neighbor recently asked me why his mother, who is being medically treated, has very high cholesterol levels, even though she eats only fish and fowl and strictly avoids butter. His father on the other hand, eats beef with almost every meal and prefers butter to margarine, has low cholesterol levels. The answer of course is within the individual, and not necessarily within the diet.

An example of this was published in the "*New England Journal of Medicine*".(11) They reported on an 88 year old gentleman who consumes 20 to 30 eggs daily, and has been doing so for over 15 years. The patient has no history of any clinically important heart disease and has always maintained normal serum lipid levels. The study concluded that the effect of dietary cholesterol is known to vary among individuals. To quote, "The homeostatic and regulatory mechanisms which tend to keep serum cholesterol constant, operate at different levels of efficiency in different individuals." Certainly sounds like biochemical individuality, doesn't it?

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Another example appeared in a previous issue of the "*Newsletter*," Volume 2, Number 1, July/August 1988. We site a study showing the lipid-lowering effect of a high protein diet. In review, the patient's diet was modified from a mainly carbohydrate intake to one that consisted almost exclusively of beef, occasionally substituted with poultry. Fruits and vegetables were limited. As a result, his cholesterol levels were reduced from 263 to 189 mg/dl. Serum triglycerides decreased from 113 to 74 mg/dl, with improvements in HDL levels.

Is Saturated Fat and Cholesterol the Real Culprit?

In 1974 the concept of "saccharine disease" was elucidated by Cleave.(12) He stated that coronary heart disease was one of several diseases on the rise during this century, and which was due to the increased consumption of refined carbohydrates, especially sucrose, The

population of Cuba, for instance has a higher intake of sugar than the U.S. population. Cuba, has a correspondingly higher death rate from heart attacks in men ages 55 to 64, than the U.S. Cleave also reminds us that coronary deaths in the U.S. appears to have fallen with the decline in sugar consumption. In 1958, sugar consumption averaged 103 pounds per person, dropping to 71 pounds by 1987.

Many researchers feel that diabetes, hypertension, and coronary disease are responsible for most deaths in Caribbean countries. Yet, the fat intake of these populations is remarkably low, averaging only 24 percent of total calories.(13)

A report in "*Scientific American*" concluded that only in rare genetic conditions are high serum levels of cholesterol alone sufficient to initiate and sustain an atherosclerotic process. Leaf, et.al.(15) proposed that a number of events must first occur to the vessel walls before cholesterol can deposit and form atheromatous lesions. He states that the deposition of cholesterol in the vessel is probably a secondary event, and that there are multiple sites at which the atherosclerotic process can be inhibited before there is any role for cholesterol.

Other evidence supports Leaf's view. For example, Armstrong, (16) described lesions of atherosclerosis as being polymorphic, or multiple. The World Health Organization (WHO) classifies atherosclerosis in four categories, one progressing into the next. The first stage is called the "fatty streak". This is regarded as a collection of smooth muscle cells that have assumed a lipid storage function. These cells are known as "foam cells". This then progresses into fibrous plaques, atheromas, and eventually complicated lesions with calcification.

Insulin and Cardiovascular Disease

Evidence strongly suggests that excess insulin can be the initiating factor in coronary artery disease, myocardial infarcts, cerebrovascular disease, and peripheral vascular disease.(17) Stout, reported elevated insulin levels in patients suffering from the above conditions compared to controls. This suggests that high insulin concentrations predispose individuals to the development of cardiovascular disease. Insulin is probably the trigger causing normal cells to increase lipid storage and form foam cells.

Dean et.al., confirmed this relationship. They found patients who suffered from angina to have elevated insulin levels. Excess insulin produces coronary micro vascular dysfunction.

From these observations, we can see why individuals with diabetes have such high incidence of atherosclerosis. Even though we associate diabetes with insulin deficiency, it is more common to find them as well as pre-diabetics and those on insulin, to have high levels of circulating insulin.

There are many nutritional factors other than dietary fat that are involved in cardiovascular disease. For example, a deficiency of copper leads to collagen breakdown. This can contribute to fatty infiltration and eventually calcification of the arteries. A deficiency of chromium causes a reduction in insulin sensitivity, resulting in an increase in circulating insulin levels. Magnesium and zinc deficiencies are also related to CHD. Other nutrients known to aid in hypertriglyceride and hypercholesterolemia treatment include vitamin C, niacin and oat bran.

You may order the following articles from our educational material list for further information:

- The Nutritional Relationships of Magnesium
- The Nutritional Relationships of Copper
- The Nutritional Relationships of Zinc
- The Nutritional Relationships of Chromium
- The Assessment of Hypertensive Tendencies From Hair Trace Element Analysis



Conclusion

Many patients are concerned about the consumption of protein, especially animal protein, in light of the scant information available to them. Lean protein does not mean fish or chicken only. The University of California at Berkeley Wellness Letter, printed a buying guide for lean protein sources. Due to the consumer demands for low-fat meat, many producers are making leaner cuts available. In fact some cuts of beef and pork are lower in fat than dark-meat poultry. They suggest that when buying beef, look for "select" grades. If "select" cuts are not available, choose "choice" cuts. These cuts are leaner than those labeled "prime" cuts. For example, they show a comparison of the fat and calorie content of 3.5 ounces of lean beef to that of chicken. Select eye of round, or minute steak, has a total of 178 calories, and contains 6 grams of fat. Of the total calories consumed this is equivalent to 30% fat, whereas, chicken breast with skin has a total of 197 calories with 8 grams of fat, which is 36% of total calories. Pork tenderloin has a total caloric value of 166. It contains only 5 grams of fat with a total caloric fat content of only 27 percent.

A recent study in the journal, "*Nutrition, Metabolism and Cardiovascular Disease*," reported finding no difference in serum fat levels in groups consuming lean beef as compared to groups consuming only fish and/or fowl.(19) The report sites other studies which showed the same conclusions. Their summary states, "these results suggest that subjects who are following dietary guidelines recommended by the American Heart Association and the National Cholesterol Education Program, can substitute lean beef for chicken and fish without significant changes in serum lipoproteins."

In summary, we hope that this will help to answer the many questions that we have received concerning our dietary suggestions. I again would like to emphasize that these suggestions are not blanket recommendations, but are based upon specific metabolic types that are recognized in a properly obtained and interpreted hair mineral analysis.