

The Fat Controversy: An Historical Approach

by T.L. Cleave, M.R.C.P.

Noted surgeon and medical researcher TL Cleave wrote the following words in 1975. They appeared in his book The Saccharine Disease, published by Keats Publishing. Twenty years later, the American anti-animal-fat hysteria is still with us, even though a number of studies have since appeared implicating the polyunsaturated vegetable oils that he warns us about as contributing factors to heart disease, cancer and other ailments of modern civilization.

Those who incriminate animal fats in raising the blood lipids and causing coronary disease would have us stop eating the fats that we have been eating from immemorial time, such as the fat found in meat and in the butter and cream derived from milk, and eat instead a whole lot of new oils, mainly expressed from vegetable seeds, many of which oils are alien to us. The reason this substitution is recommended is because these oils contain greater amounts of polyunsaturated fatty acids, which when eaten increase the blood cholesterol little or not at all compared with their saturated analogues present in animal fats; and which are also considered to be more valuable to the body structurally. Indeed some, such as H. Malmros, would have the above substitution carried out on a national scale, and in certain countries, like Australia, the very dairy industry has been threatened. Let us therefore look into this substitution more closely, from the evolutionary point of view...

The keeping of flocks of sheep, herds of cattle and other domestic animals, in order to provide a continuity of meat and milk, started with neolithic man many thousands of years before the Christian era, and even only 1,500 years before that era Moses, in the *Bible* (Deuteronomy 32:14), was stating that Jehovah gave to his people to eat "butter of kine and milk of sheep with fat of lambs." It is true that the consumption of fat in some parts of the Old Testament is forbidden, but this is always in connection with the making of offerings, the fat being needed for the performance of this act. It was once explained to the author by a guide of the great temple at Karnak in Egypt that every particle of these burnt offerings was eaten by the priests. And no one reading the first ten verses of the seventh chapter of Leviticus can doubt that the guide was right. To these ancient fats we are therefore well adapted, quite apart from man, as a hunter, being well acquainted with the fat of animals in evolution, in times far more remote than the neolithic era.

Contrast with these ancient fats the new oils, mainly expressed from vegetable seeds. Not only are many of these seeds not a natural food for man (e.g. cotton seed and sunflower seed -- and, incidentally, the sunflower does not even come from the Old World, as we do in the British Isles,

but from the New), but also the oils expressed from many of these never existed in any quantity before the invention of the modern hydraulic press or the new solvent procedures, and consequently were scarcely eaten in this country before the introduction of margarine, around 1916, during the First World War. Evolutionarily, these oils make us not so much men as the equivalent of a flock of greenfinches, and the evolutionary incongruity is heightened by the fact that the coronary explosion amongst us, as will be seen later, came in since the introduction of just these oils at the period stated, though in margarine they are often saturated by a stream of hydrogen....

Some have objected that the animal fats may be destroyed by stall-feeding of the animal themselves... However, let the battle be fought out where no stall-feeding is in question, as in the case of sheep. Not one of those who advise that animal fats be replaced by vegetable seed and similar processed oils makes an exception over mutton fat, for this is a typical saturated fat. We are advised not to eat the mutton fat of grass-fed sheep, though we may love it. And this is the evolutionary crux -- the thwarting of a natural taste for a natural food.

Indeed, an elaboration of this point arises here, for Crawford, having been at great pains to demonstrate that domestic animals, like cattle and sheep fed on grass, have much more fat between the muscle fibres (marbling fat) than in the case of their wild counterparts, has suggested that eating the meat of these grass-fed animals may hold dangers for us, since it may be akin to taking into the body pathological material, or "eating obesity" as he called it. But it is contended here that evolutionary considerations show this argument to be in serious error.

For though it is true that large numbers of domestic cattle (and still larger numbers of sheep, as already said) are fattened up for market in this country on grass, it would not be possible to fatten up wild cattle in this way, nay more than it would be possible to fatten up a wild rabbit on grass as compared with the various breeds of hutch rabbit. No, it has taken very long periods of selective breeding to evolve animals that will behave in this manner. The situation is even better seen in the case of domestic ducks, most of which cannot fly off the ground. This is true, from the Aylesbury duck in this country to the flocks of domestic ducks seen along the rivers of China, each flock attended by a small boy. Thousands of years of selective breeding have been needed to replace muscle by fat to this extent (and the same period of time has been available for some adaptation in man to such food). We must, therefore, very sharply distinguish this evolved fat (using "evolved" in its transitive sense) from any fat that is remotely pathological. Else we shall be banning our best eating apples because they are so far removed from crab-apples, and our best wheat because it is so far removed from the primitive ancestral grasses. And it should be added that it is the above

"marbling" with fat that is partly responsible for the taste in lean meat, without it there is a tendency for lean meat to have a watery taste.

Why do our tastes seek to increase the fat in animals and birds in the above manner (for who would compare the pleasure in eating most wild ducks with that in eating an Aylesbury duck?) The answer must surely be that, just as the body seeks in every posture, and in every activity, to economize muscular action, in order to minimize work on the heart, so also it seeks, by increasing in meat the ratio of fat -- a food that it completely combusts -- to minimize work on the kidney, an organ that plays so big a part via the blood-pressure, in the length of life in each one of us. We should do well not to dismiss this frequent preference for fat from our reflections, which is present in perhaps a minority of people -- but a very important minority.

But Crawford attacks not only the quantity of fat, but also the quality, in grass-fed animals. He points out that the fat in domestic cattle is more saturated -- i.e., has a higher ratio of saturated fatty acids -- than occurs in the fat in wild African cattle feeding on a more varied diet. Yet his list of wild animals includes the Uganda hob, of the plains, with the identical fatty acid ratios present in our own cattle and in the milk and butter obtained from them. Is it to be supposed that we should come to harm, especially coronary harm, if we often ate the African hob?

It may well be, in fact, that sometimes the body may prefer a high ratio of saturated combustible fat. It will be recalled that only some 67 years ago, Metchinkoff, Director of the Pasteur Institute, in his *Prolongation of Life*, directed the attention of all Europe to the longevity of certain Bulgarian peasants living on milk and milk products -- which abound in saturated fats. The influence of this work is still with us today, as seen in the common taking of yoghurt, and stands as a perpetual challenge to those who would have us depart from eating natural foods, naturally desired.

Far from indicating, therefore, that the substitution of unsaturated vegetable and other oils for saturated animal fats has any value in the prevention and arrest of coronary disease, the evolutionary approach points to the exact opposite -- and in addition points to the following danger. For, as touched on above, it was not until the invention of the modern hydraulic press, or the new solvent procedure, that cotton seed oil and some other processed oils ever appeared in any quantity on the surface of this planet. With the exception of olive oil, few of them, as already stated, were eaten at all before the First World War. The question, therefore, arises as to whether the consumption in large amounts of substances that are essentially alien to the human body carries any risk with it ...

[There are] markedly different personal inclinations that exist over fat consumption, so that some people, like Jack Sprat, desire very little fat, whilst others, like Mrs. Sprat, desire a great deal of it. These striking personal differences are of evolutionary origin, as set out by the author in his earlier

work. For in man a higher proportion of calorific needs is derived from fat in cold climates than it is in hot climates. Even in Europe, some 40 percent of the calories are derived from fat in northern parts, as against 20 percent in southern parts, like the south of Spain and the south of Italy. Thus in Great Britain, where the population is of mixed descent, due to past invasions from the north and south of Europe, and in the United States, where the white population is also of heterogeneous descent, both Jack Sprats and their opposites abound. Consequently in some people a low fat consumption, when evolutionarily considered (that is, in term of natural tastes), may be too high, whilst in other people a high fat consumption may, similarly, be too low. Such departures from the natural level may be due to financial or other factors, including cases of feeding in schools and institutions.

Clearly any attempt to relate fat consumption to coronary disease would have to take into consideration not only the above evolutionary differences, but preferably also any marked departure from these differences, due to the external factors mentioned. Yet there is little or no evidence of such consideration and we find bold comparisons being made between fat consumption in the Danes and in the African Bantu. More particularly, those who contest the relationship of refined carbohydrates to coronary disease and especially those who contest certain clinical studies relating personal sugar consumption to the disease, forget that clinical studies have never demonstrated any relationship whatever between personal fat consumption and the disease.

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An Additional Note: There is another complicating factor to the whole dietary lipids picture that is also misunderstood. Fatty acids are essential parts of all body tissues where they are the major part of the phospholipid component of the cell membrane and are not just stored energy. Low fat diets that supply adequate calories are basically high carbohydrate diets. When the body does not get enough fat from the diet, it makes fats "from scratch" from carbohydrates. The fatty acids that the body synthesizes are saturated fatty acids -- exactly the same kind of saturated fatty acids found in butter, cream and animal fat -- and monounsaturated fatty acids -- exactly the same kind of fatty acids found in olive oil. The cell membranes are composed of a combination of saturated fatty acids, monounsaturated fatty acids and polyunsaturated fatty acids.

It happens that the more fat you consume in your diet, the less your body tissues make from scratch. But when you consume high levels of unnatural polyunsaturated fatty acids such as the

kind found in commercial vegetable oils, the normal body synthesis of saturated fat is eliminated and the ingested polyunsaturated fats are used for structural fatty acids, leading to an unnatural balance in the cell membranes.

Essentially it amounts to the following. Low fat, high carbohydrate diets cause the body to make the saturated fatty acids and monounsaturated fatty acids it needs. When the fat that is eaten is mixed and mostly saturated and monounsaturated, it is like the fat the body synthesizes. Under these circumstances, there is no problem with the fatty acid supply that the tissues have available for incorporation into the phospholipids that are an important part of the membrane structure of all cells. On the other hand, when the fat that is eaten is more highly unsaturated, the fatty acids available for incorporation into the tissue phospholipids are more unsaturated than the body normally prefers and this causes a number of differences in membrane properties that are thought to be detrimental to the regular body economy. High levels of polyunsaturates in the diet have been shown to increase cholesterol levels in tissues, increase fat cell synthesis in growing animals, alter the response of the immune system, increase peroxidation products such as ceroid pigment, increase gallstone formation, and of all things decrease HDL cholesterol in the blood.

Saturated fatty acids have recently been shown to be necessary for the proper utilization of essential fatty acids and for efficient modeling of the bones. Consumption of saturated fatty acids also results in lowering of Lp(a) in the blood. Elevated levels of Lp(a) are a marker for heart disease. The textbooks tell us that saturated fats protect the liver.

So the practice of breeding and feeding domestic animals is not to be disdained, especially if these animals are naturally and humanely raised. For thousands of years, these animals have supplied mankind with the kinds of fats that give him energy and help his body to work more efficiently. The domestication of animals was a great step forward in man's evolution because these animals ensured a steady supply of quality meat and fat, and freed him from the risks and uncertainties of a hunter-gatherer existence so that his energies could be directed to mental and spiritual growth.