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CALORIES - NUTRITIONAL AND HARMFUL TYPES

By Royal Lee, D.D.S.

The calory is a unit of energy and reflects the fuel value of a food. It is very important to specify the availability of the foodstuff to the species involved when the term calory is used, for some animals can utilize even cellulose as carbohydrate, which is totally inert as food for others. Even methods of assay for carbohydrate afford very unreliable results, the infinite forms of natural carbohydrates from hemicelluloses to pentosans have nutritional coefficients for the human species of indeterminate values.

So the logical course to follow is to use only food sources that have a long history of known usefulness to human physiology. That, in fact, is the secret of success in all animal husbandry, and it is a particular lesson to observe that experience gained on one species cannot be transferred to another.

While proteins as well as fats and carbohydrates have calory value, it is the latter two categories that are considered as calory sources alone, but we must here recognize a first principle of nutrition, the cardinal premise that, once a foodstuff has acquired a reputation for wholesomeness and health building, it be always supplied in its unadulterated state, and unaltered by improper processing, refining, or aging. Such damage may not be reflected in the calory content, may only be evident by careful tests in feeding animals or humans.

Here we run afoul of much chicanery. If animal tests show damage, the processor immediately shouts—"No such effect occurs to human consumers." To show such effects in tests on human subjects may well be impossible, for we cannot run parallel experiments on human subjects like we do on animals unless we have expendible human lives to experiment with. This is not possible in a country that has officially subscribed to the Golden Rule, although unofficial tests are being imposed on a long-suffering public most of the time. (Refer to the transcript of the testimony before the Delaney Committee of Congress on poisons in food if you wish more information—free copies available from the author).

It must be admitted here that animal tests indicating any adverse reaction to any food sold for human use should be accepted as also applying to the human species until unquestionable proof to the contrary has been established. No other policy can be justified. When flour bleached with nitrogen trichloride was proven to cause epileptic fits in dogs, the makers unanimously claimed such reactions were confined to the canine species. But in the March 1957 *Cosmopolitan,* bleached flour products were shown to cause epilepsy in the human, among other serious reactions. It required fifty years of the use of bleached flour by the human species before this was publicly reported.

Bleaches all destroy vitamin E in flour, and for that reason are outlawed in Germany. Vitamin E de-

ficiency in animal tests produces extensive degeneration of the peripheral musculature (1,2,3,4,5,6) and of the heart muscle plus changes in the electrocardiogram (7,8,9). Vitamin E increases the power of the isolated heart, increases the coronary blood flow, decreases the consumption of glucose and oxygen (10,11). Where test animals were deprived of Vitamin E alone, 13 out of 28 dropped dead from heart failure within one year (7). Possibly no better example could be cited to show the terrible consequences of permitting a fraction of one percent of a vital food to be destroyed by ignorant processors. The Vitamin E of flour is lost as soon as its oils become rancid, a change that occurs in a few days after the milling of the grain, unless the flour is refrigerated. To pretend that these consequences of Vitamin E deficiency occur only in test animals, never in human subjects, is an important misconception unquestionably fostered by the makers of this common "foodless calory" product, bleached flour.

Synthetic imitations of natural foods are another great class of "foodless calories." The hydrogenated fats are in this category, so is synthetic dextrose (corn syrup, glucose of commerce).

A high blood cholesterol is known to predispose to heart disease, hypertension, and cancer (13, 14, 15). Hydrogenated fats promote an increase in blood cholesterol; natural unrefined vegetable oils promote a progressive reduction in blood cholesterol (16). In these synthetic products we have new molecular forms that the human physiology never has had an opportunity to become adjusted to. Besides, they are totally unaccompanied by the vitamin and mineral compounds of organic nature that natural foods contain, like the vitamin E complex of cereals.

The carcinogenic effect of this high blood cholesterol has been known for a long time. Adding cholesterol to the diet of test animals susceptible to cancer caused metastases in 90 percent of the animals, where without the cholesterol there were no metastases (17). Patients with carcinoma were found to have an average of 66% more cholesterol in their body fat than normal persons (18). Blood cholesterol has been found consistently higher in victims of carcinoma (19). We do not attribute a primary role to cholesterol in carcinogenesis, but it appears unquestionably to be one of the definite predisposing factors, and suspected to cause the occurrence of cancer in the susceptible individual at an earlier age than otherwise (20).

All this represents evidence of unwholesomeness of the synthetic hydrogenated fat, a product that is not food to start with, but a counterfeit, immoral imitation of natural food fats. Glucose, another synthetic food fraud, made by hydrolyzing corn starch, was condemned by Dr. Harvey W. Wiley when it first appeared in these words:

> Now let me give you just a few more words about another feature of injury. You understand that we eat starch and fruit sugars. We digest those. If the sucrose has not been digested we digest it. If the starch has not been digested we digest it, with the functions which we have achieved in this life, and then the sugar enters the blood stream. Now what happens with the levulose? We never find levulose in the blood stream. We find only dextrose. The sugar that is in the blood and goes to the tissues and there is burned is always dextrose, it is never levulose. I wish I knew what became of levulose. I do not; but it is possible that there may be an enzyme, a digestive enzyme, that converts levulose into dextrose. Suppose you have too much starch and too much sugar. You cannot burn it all at once. It is converted into an inert substance called glycogen and is stored up in this condition in the liver and in the tissues. The burning of the sugar in the blood is activated by the pancreas. Now if we flood our stomachs with dextrose, than we will need half a dozen artificial pancreases to take care of it, and there is the real danger, the threatening danger, as every wise physiologist will tell you, from that source. So that both by reason of paralysis of our digestive apparatus through lack of functioning that is a threat in itself, and by reason of the increase of the amount of dextrose which we ingest far above what we need we endanger our health in the most serious way. So that I voice now, and with all the emphasis I can put on it, my disagreement with every other person, except Dr. Menges, who has testified here, and it has been unanimous almost, who has said that this predigested and prechewed dextrose is harmless. I deny it and I think I have most scientific grounds to convince you, gentlemen, that it is not a harmless substance (21).

It was not until 1947 that Lukens & Dohan at the University of Pennsylvania by animal tests showed that this synthetic dextrose was the only known form of sugar to cause diabetes in test animals. The very thing that Dr. Wiley predicted from his knowledge of human reactions to unnatural influences (22).

As a final example of the tremendous difference in the wholesomeness of natural foods as distinguished from the synthetic counterfeit, I cite the fact that raw honey in reasonable amounts fails to disturb the blood sugar level of the diabetic patient, according to recent reports from German investigators. Further, it is very important to note that in the field of dentistry, natural sugars including honey were found incapable of causing or increasing the incidence of tooth decay, in contrast with refinished sugar which promoted tremendous increases in carious teeth (23).

In view of the total inadequacy of the pure food laws to protect us against these health-destroying, non-nutritious counterfeit foods, it is essential for every one knowing of the situation to act to properly inform his fellows. Otherwise, he becomes by his silence, equally guilty with the food counterfeitors, of undermining the public health and helping to "cover-up" for the law violators.

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