

# *Cancer - relation to food*

## **MALNUTRITION AND HEREDITY**

(Unfitting the Unborn)

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Biologists have argued with more prejudice than logic over the question of whether acquired characteristics ever become hereditary. Most of us have heard about the fellow who cut off the tails of mice generation after generation, but found the young mice continued to be born with tails, then decided that acquired changes were not transmitted to offspring.

There are a lot of things wrong with that experiment. First, the changes that were made were of external origin, not internal. They were not induced to occur by a deficiency, for example. We know that test animals are born without eyes if carried through a few generations on a vitamin A deficient diet; in fact, children born without one or both eyeballs no doubt owe their predicament to their mother's failure to get enough of this vitamin, and there are many such examples in institutions for the blind. Normally, if such individuals were born in any species, they would die by reason of the handicap. But suppose we consider fish living in the dark waters of Mammoth cave? They would get along as well without eyes as with them. And as a matter of fact, the fish in Mammoth cave are minus eyes. Maybe they lost them in just that manner.

That method of eliminating eyes is a lot different from the mouse-tail experiment. It is eliminating the organ by starving it out of existence. The eye needs more vitamin A in its embryonic development than any other structure, and is first to suffer in case of deficiency.

At the last meeting of the American Association for the Advancement of Science Dr. T. M. Sonneborn of Indiana University discussed this matter of transmission of acquired characters, and admitted the existence of a possible mechanism in the way of the "migratory plasmagenes" of the cell. Up to now, American biologists have differed with the Russian Lysenko on this point. The argument, however, has entirely revolved around theoretical propositions and this is a field where the theories happen to be too incomplete to be important. The facts definitely point to the inheritance of acquired traits.

Gates, in his treatise Human Genetics, accepts the fact that nutritional variations can influence the gene and change structures that are otherwise invariable, even using the instance of where the number of toes of the foot of a guinea pig were altered thereby. (1) Certainly, the same environmental nutritional pattern over many generations will accomplish more and more of such changes, or a progressive change up to some limitation that may be inherent. Dr. Pottenger in his cat experiments found progressive degeneration becoming more and more serious in each litter, in fact so serious as to limit the number of generations to two or three that could be maintained on the pasteurized milk. (2) Here, the tendency to develop the deficiency symptoms at an earlier age in each

generation was conspicuous, the thing Gates calls "anticipation," and finds common in hereditary defects. In fact, Gates in his discussion of the details of hereditary defects such as cataracts of the eye or progressive muscular dystrophy, shows how they are strictly a condition that follows definite laws of genetic transmission and are either Mendelian recessive or dominant characters, while one who is familiar with deficiency disease can see the definite causative effect of deficiency.

For instance, even congenital cataract, while unquestionably an inherited condition, usually shows progressive improvement if the victim is supplied with a high intake of the vitamin C and G complexes. We recall one boy who had to drop out of high school in his first year because of loss of sight, after vitamin treatment was enabled to finish and take a job as salesman, by keeping up the use of an optimum amount of the vitamins. Without the extra vitamins, his cataract would begin to recur. The improvement in diet changed his future from a ward of the State into that of a useful, independent citizen. Though born with a susceptibility, it was controllable by diet.

Dr. Davidson in his celebrated experiments in which he caused mice to become cancerous on a diet low in vitamins and minerals, and by feeding a better nutritional schedule cured the mice and made the strain immune to cancer, simply proved that poor diet can cause racial degeneration, and a good diet cause racial regeneration. He was able to cure cancer, not in the individual, but in the race, by a better diet. (3) He was able to cause cancer consistently, not in the individual, but in the race, by a poor diet. To get the individual mouse to become cancerous he had to resort to two causes--poor diet plus a chemical irritant. Since we are all exposed to both influences in more or less degree, it is no wonder that cancer is progressively increasing in all countries where poor diets prevail--all countries where refined sugar, bleached flour and packaged groceries prevail.

In considering the importance of diet in cancer, it is well to recall the comment of Dr. Daniel T. Quigley, made at the national AAAN meeting last year, where he showed many slides of patients before and after surgical removal of cancer, and in which Dr. Quigley found in over 30 years of experience that no patient had had a recurrence of cancer who had followed his dietary recommendations. That is one situation where an ounce of fact is worth a ton of theory.

A recent report by a German doctor on the treatment of multiple sclerosis is very similar. In treating over 600 cases, this doctor says that the only treatment he found of value was dietary correction, the use of uncooked foods as far as possible. By this means he could produce progressive improvement in all new cases, and at least arrest the progress of the disease in all old-standing cases. Since this disease is of the same order as the progressive muscular dystrophy of hereditary nature that Gates found so definitely carried by genes, we begin to suspect that here is another situation like Dr. Pottenger's cats, or Davidson's mice. Gates in fact discusses so many degenerative diseases that are known to be transmitted that we suspect that all degenerative disease is or tends to be hereditary. And we are not alone if we say that all degenerative disease is due to malnutrition. Dr. Johnathan Forman of Ohio is one exponent of

this idea, and Dr. C. W. Cavanaugh of Cornell is another. We, of course, have to say that the malnutrition in question may have been acting for many generations.

Cancer today is common in children. Fifty years ago it was just as much less common in children as it was in older subjects. The increased incidence is not confined to old people. There is the same degree of increase in all age groups. The same is true of heart disease. Some professional apologists are telling us that we have more of these diseases today because more people live to the susceptible age. That kind of statement is not founded on fact, but on the advertising programs of makers of foods that undermine the public health.

Another disease that is increasing with alarming velocity is diabetes mellitus. Dr. Joslin in his latest book on the subject tells us that in another fifty years at the present trend, half the population will be diabetic. He also states that the cause is too much sugar in our diet. Again, it has been statistically proven that diabetes is hereditary. (4) So here we have another acquired condition that becomes hereditary.

The exact mechanism by which an acquired trait can become hereditary is in fact fairly well established. It seems that each specialized cell of the body produces continually and discharges into the blood stream what might be called blueprints that guide or determine the nature of regenerating of new cells that can assimilate these specialized organic substances which act as "blueprints." Biologists call these factors determinants, and there is clear evidence that the germ cells of the sex glands obtain these determinants from the blood stream and pack them into the chromosomes, where they can in turn accomplish their function of determining the characteristics of the offspring as they unfold during the development of the embryonic tissues. It is now easy to see that if both parents are lacking in the specialized cells of the islets of Langerhans, the offspring of such parents is bound to have either a weakened group of these islets, or none at all, depending on the severity of the parent's disability. It is of further interest to find that these determinants owe their specific nature to the pattern of trace minerals they are composed of. (5)

Therefore, trace mineral deficiency, it is evident, can act also to impair hereditary transmission. And as these trace minerals in the determinants are combined organically into protein linkages, it is evident how the nature of these minerals in our foods can be of vital importance. Compost gardening in building up the organic mineral levels of the soil is here justified, and its results explained.

Cobalt is one mineral element required in remarkably small amounts, but it has to be in the organic combination now known as B<sub>12</sub>. Our authorities of a few years ago were sure that cobalt was not an essential part of the human diet. Today they are just as sure that we cannot live without it. We soon develop pernicious anemia if we fail to get this vitamin.

It is of interest to find that hybrid corn does not have any vitamin B<sub>12</sub> or other cobalt compounds in its germ, although ordinary corn grown on the same

soil carries definite amounts of cobalt in its ash. (6) Since hybrid corn does not need to form germ tissue to grow offspring, it can put all its energy into producing more of the other elements of the seed. Certainly a wonderful example again of the ability of man to create quantity at the expense of quality, to make a product "worse so it can be sold for less."

These determinants as chromosome components also require the presence of certain vitamins to insure their preservation and integrity. Vitamins A and E are vitally essential, in fact it has been observed that in E deficiency the chromosomes of the cell disintegrate. No wonder vitamin E is necessary to promote either cell growth, cell division, or tissue repair. Without the vitamin E there are no determinants to guide the job of reconstruction. And the importance of vitamin E in heart disease is easy, too, to understand. The heart is the hardest working organ of the body, needs the most efficient repair service. The sudden death of persons with no previous sign of heart disease so common today has been duplicated in test animals, deprived of vitamin E. (7) The bleach chemicals used in all flour are specific destroyers of this vitamin, as they are oxidizing agents, and destroy not only the vitamins but also the enzymes. The importance of the enzyme content of foods has been recently emphasized (8) because it has been found that unless the enzymes of bran or raw milk are present in the intestinal tract the human economy fails to assimilate the minerals in our food. Again the determinants are starved and impaired. It is quite probable this enzyme loss in the pasteurized milk that is responsible for the terrific degeneration of succeeding generations of Dr. Pottenger's cats. Our children are being unnecessarily subjected to the same identical influence, and with identical results.

Cancer is a disease in which the cells change into other than the original types. Just what could bring this about better than the deficiency of the various factors needed to maintain the integrity of the determining blueprints that carry the inheritable characters? Deficiency of vitamins A, E and various minerals have been known to contribute to cancer. A more complete discussion of this probability is in Protomorphology. Without the protective vitamins, the chromosome degenerates, and falls back into a more primitive and simpler structure, the cells change accordingly, and a cancer takes the place of the original tissue. By reason of the loss of the inherited blueprints, the cell has forgotten its responsibilities and its ability to coordinate its activities with the rest of the body. It becomes a new and parasitic colony, composed of cells that have lost their record of heredity and their sense of obligation to the social order of the parent organism, taking their food supply as usual from the efforts of associated structures, but failing to perform their function in return, instead using all food available to promote growth alone. Cancer in the case of Dr. Davidson's mice was an acquired trait, that was transmitted to offspring, which on the poor diet became 100% cancerous, each individual dying of cancer instead of old age.

Gates concludes (in his review of the genetic background of cancer in human patients) that susceptibility to cancer is in a large part determined by inherited traits.

The forces of heredity, then, tend definitely to inflict upon unborn children

the penalties of poor judgement and carelessness that their mothers and fathers exercised in selecting their food. These penalties accumulate, each generation paying a greater price in lost health. A race that fails to take notice of dietary problems soon dies out. Dr. Weston A. Price found in his travels and studies of primitive peoples that they had accumulated a remarkable folklore of nutritional information, passed down from generation to generation. (9) Now we can see it is not so remarkable. The existence of the people he studies actually was dependent upon that folklore. Those families who failed to accurately transmit this information, to take the trouble to learn the necessary facts of life, dwindled into nothing. We think we are of higher intelligence, but are being subjected to that same test.

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