

THE ORIGIN AND DEVELOPMENT OF THE STUDY ON CHRONIC CALCIUM AND VITAMIN D DEFICIENCY.

I began practice in 1950 already disillusioned with the overwhelming application of prescription of repeated laboratory tests and prescription of drugs, and the use of surgery. Little did I know at that time that such an interest, or disinterest, would lead me to develop a revolutionary concept of the practice of medicine. This was to concern the relation of lifestyle and all physical and functional findings of the patient in determining far less invasive and more natural therapy of disease.

At that time an interest in the autonomic nervous system was greatly enhanced by the then accepted therapy of peptic ulceration by section of the vagus nerve. On that basis, I embarked on a study of the complaints and physical findings in all patients which one might attribute to disassociated and heightened activity of either the sympathetic or parasympathetic divisions of the autonomic nervous system. The objective was to identify findings which likely arose because of imbalanced autonomic nervous system activity and which would be indicative of proneness of the non diseased person to develop disease.

By 1958 that clinical study of my patients, which included reference to their lifestyle including diet, led me to propose that chronic asthma and forms of non infective chronic diarrhoea represented the breakdown of autonomically stimulated ancillary adaptive functions of the lungs and intestines. These were functions that were creating biochemical compensation for the effect which chronic deficiency of calcium and vitamin D, enforced by lifestyle effects, had on the body.

The lifestyle defects responsible for the deficiencies are a diet that is deficient in calcium and vitamin D and an indoor and well clothed habitus which gives rise to chronic deficiency of the sun-on-skin generated D vitamin.

Years later as I attempted to provide reason for the benefits which diseased patients experienced after I treated these deficiencies I was led to apply certain facts of man's evolution. These were that man had evolved under a canopy of solar radiation which caused only the synthesis of glucose, oxygen, vitamin D and melanin in vegetable and living cells. Consequently, calcium, which had been rendered biologically active by vitamin D through ionization was destined to be intimately related to the energy transfer processes of the primitive living cells and of the cells of developing mammalian organisms. I, therefore, proposed that chronic deficiency of either one or both of those synergistic vitamin and mineral factors would lead to cell energy starvation.

The body may respond to such deficiency by the autonomic excitation of the ancillary adaptive function of one or more organs which had simultaneously evolved in the same evolutionary period to provide protection against cellular deficiency of the calcium ion.

The ancillary adaptive function in lungs and intestines was altered secretory and smooth muscle function that would lead to increased retention of acidic carbon dioxide or the increased production and more rapid evacuation of alkaline intestinal secretions. The increased cellular acidity so created would lead to the hyper-ionization of residual cellular calcium that would preserve cell function. In those organs persisting deficiencies and autonomic stimulation would ultimately result in the creation of chronic asthma or chronic non infective diarrhoea.

These diseases would initially be based on functional changes of those tissues that could readily be reversed by therapy of the deficiencies. Ultimately, however, the diseases would be based on physical changes such as the irreversible replacement of cell mechanisms and on cellular disrepair. These would necessitate therapy with drugs which would produce some semblance of normal cell function.

The clinical study of other diseases in this light led me to propose that the adaptive device of the arterial system which resulted in the creation of essential hypertension was the transduction of kinetic energy, exerted on a blood constituent, into appropriate biochemical change. In diabetes the acidifying device was attained by the abnormal metabolism of glucose producing organic acids.

Evolution also predicated that, separate from organ adaption, the individual cell would also be capable of adaption to that same deficiency through genetic change. This adaption would be in the form of a "reverse mutation" producing a malignant cell which was of a primitive form that existed prior to the primordial dawn. Like that primitive cell which never knew solar radiation, vitamin D, or ionized calcium, the progeny of the malignant mutant would have no need for ionized calcium to extract energy from their surroundings by a process which currently is defined as fermentation.

The sequential occurrence of such organ "mal-adaptive" diseases was accepted, as indication that, once the adaptive potential of an organ was depreciated for reason of gross physical change which replaced functional change, similar autonomic call would be made on another organ. The more frequent coincidence of such organ and the cellular form of mal-adaption, and the association with them of some of the direct effects of the deficiency, as opposed to the isolated occurrence of those complaints, and diseases, indicates the presence in them of a common causal factor.

The above mentioned direct physical and functional effects of the deficiency represent an "ionic calcium deficiency syndrome". This syndrome, which grew out of my early eight year clinical study, is of multiple complaints and several physical findings which are the consequence of the effect which cell energy starvation may have on the cells of different tissues. Foremost among these clinical findings are complaints and physical findings arising because of smooth and skeletal muscle spasm, and complaints and physical findings which arise because of increased activity of central and peripheral nervous tissue.

Examples of the functional clinical findings of those forms of muscle are intestinal cramping and pain, and aches and cramps of skeletal muscle. Examples of such direct physical effect of the deficiency on muscle are the findings of gross irritability of skeletal muscle bundles when percussed and the findings increased myotatic irritability of that muscle. These are local tonic myoedemic contractions which occur at the site of percussion and the idiomuscular peristaltic contractures of Schiff which rarely are seen to emanate from that nodule.

Examples of the functional clinical findings arising for reason of increased activity of the nervous system are the complaints of increased nervous irritability and anxiety. Examples of related physical findings are the frequent obvious demeanor and physical restlessness of the seriously deficient patients.

This deficiency syndrome also involves a physical-chemical finding of increased acidity of saliva which is a reflection of the total body acidity created by the above mentioned acidifying adaptive function of the lungs, intestines and carbohydrate metabolizing tissues. Unlike the above mentioned muscle and nerve findings which are the consequence of the direct effect of the deficiency, this finding represents the effect of an indirect adaptive effect mediated by the autonomic nervous system.

This latter physical finding is, by far, the most common and easiest defined feature of the deficiency state. On that basis, it is accepted as the "trade mark" of the deficiency. The infrequent occurrence of this finding in the face of obvious direct and indirect evidence may be attributed to the fact that, in some patients, autonomic call for biochemical compensation had not been made on acidifying adaptive function.

Only very rarely will the physician observe the complete deficiency complex in deficient individuals which includes all or most of the direct effects of deficiency and possibly one or more mal-adaptive diseases with or without malignancy. On the contrary almost invariably the physician will only observe a partial picture of that complex even in markedly deficient individuals.

An example of such a partial clinical picture is a deficient patient suffering from chronic asthma, Crohn's ileitis, rheumatoid arthritis, hypertension, or diabetes, in whom the physician may only observe an acidic salivary pH, tenderness of muscle on moderate pressure, and the myoedemic contraction of the forearm musculature on percussion of that muscle. Of all the complaints that may arise because of the deficiency such patients may only experience occasional leg cramps, nasal "allergies", and mild constipation.

As compared to such partial clinical pictures the rare complete clinical pictures of the deficiency state are most important in instructing the physician of the relationship of lifestyle defects and other clinical findings to major disease. Equally important is the observation, in those complete and partial pictures, of the marked or lesser relief of the presenting major disease and of the associated clinical findings which is seen to occur once therapy of the deficiencies is applied.

This study, therefore, has been a clinical study of many thousands of patients which resulted in the definition in them of certain lifestyle defects giving rise to particular deficiencies. These deficiencies, in turn, resulted in the creation of cellular deficiency of ionic calcium that may have a direct effect on tissues to create complaints and physical changes, a direct effect on cells to create malignant mutation, and an indirect effect of organs via the autonomic nervous system to give rise to disease.

On the above basis I propose that, while most complaint and diseases experienced by the members of civilized societies may be precipitated by factors such as stress, other deficiencies, toxins, and others, the fact remains that those factors may be ineffective in inducing those illnesses had those individuals not experienced chronic deficiencies which induced energy starvation of their trillions of cells and adaption to that starvation.

Author's note:

The above represents a brief description of the origin and development of the study of findings attributed to chronic deficiency of calcium which has been rendered biologically active, through ionization, by vitamin D.

The chemistry and reference to some of the biochemistry of calcium is defined in a book THE CALCIUM FACTOR authored by myself and Robert Barefoot a geochemist.

The clinical aspects of those chronic deficiencies are defined in a writing titled THE CLINICAL ASPECTS OF CHRONIC VITAMIN D AND CALCIUM DEFICIENCY.