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NUTRITION AND VITAMINS IN RELATION TO THE HEART

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Proper nutrition is a part of Medical Science that has been forgotten for many years. However, today it is again coming to life and being considered in relation to disease. There are two general schools of thought in the vitamin field. One believes that vitamin factors can be made and should be dispensed in a chemically pure form, in the highest possible concentration. This is the idea back of the program to synthesize every vitamin, and put it on the market as a pure, crystalline product. It is the principle that most vitamin and drug concerns follow.

The other school of thought believes that vitamins are like other food factors, exist as very complex groups of associated principles of synergistic nature, and that if the complex is taken apart, it is no longer capable of producing its normal nutritional and metabolic effect.

Natural complexes are:

- (1) Colloidal, protein in nature, usually an enzyme or co-enzyme.
- (2) The crystalline vitamin itself in the natural product is in combination and cannot be split off without destroying its biological relation, if separated it must be reassembled before it can again function.
- (3) The natural complex carries trace mineral activators without which the enzyme fails as a catalyst.
- (4) If so called, “high potency” crystalline vitamins are taken into the system. The system may be called upon to put them into their proper combination before they can function as a vitamin. Meanwhile, most of the crystalline component is lost through the kidney, as is well known, and fails to be of any value.

To get the potency of a natural vitamin complex it is tested clinically on the human subject. Due to the fact that natural concentrates are food, there is no need for test animals, because there is no danger of overdosage. When synthetic vitamins

or drugs are tested, they are tested according to the rate unit test. The reason being there may be a danger of a synthetic becoming toxic if given in too large dosage.

Now I would like to discuss the affect of natural vitamins on heart disorders.

1. Vitamin A has been found useful where hypertension is aggravating atheroma. (Fatty degeneration or thickening of walls of the large arteries). The A acts in conjunction with G to lower blood cholesterol which is known to experimentally cause atheroma when present along normal levels. You will find that most diabetics tend to have this picture.
2. Vitamin B will act to improve nervous control of the heart by re-establishing nerve conductivity where arrhythmias, fibrillation or heart block has developed. Natural B complex is high in B4. The B4 component that is otherwise known as the “anti-paralysis” factor is commonly lacking in ordinary preparations of B complex. Its presence is essential to treatment of the nerve degeneration common to B complex deficiency. A cautious use of B4 is required for the simple reason that it so quickly restores function in those cases where disorders have resulted from its absence, that severe reactions may accompany an overdose.

Suppose that some organ as the heart supplied with both stimulatory and inhibitor nerve supply, has one group paralyzed in whole or part by a deficiency of B4. Remember that we have here an accelerator control in the stimulator nerve and a broken mechanism in the inhibitor. If the inhibitor is paralyzed we have tachycardia, because the accelerator is still alive; possibly it, too, is somewhat impaired in function of the deficiency. On administration of a heavy dose of the complex containing the missing element, the accelerator nerve, that has not been so badly damaged by the

deficiency quite likely may respond to the nutritional influence first.

The success of the complete B complex in treating heart arrhythmias should not encourage the belief that it is the most valuable vitamin for heart conditions. The primary vitamin for this organ is the Vitamin C. That is because Vitamin C (with its natural synergists) has the phenomenal action of increasing the capacity of the blood to carry oxygen. That means that this action reduces the load on the heart, which is the primary importance in every heart case regardless of the nature of the disease.

Vitamin E complex will tend to prevent muscular degeneration by increasing the cellular activity and repair rate.

Despite the wide promotion of tocopherols in high unit dosages for cardiac involvement, clinical experience has shown that the results to be anticipated from high unit dosage of the single tocopherol factors are disappointing.

This is believed due to the fact that natural forms of Vitamin E complex lose up to 99% of their potency when separated from their natural synergists. (Americal Review of Biochemistry, 1943, page 181.) These synergists include tannins, fatty acids or Vitamin F complex, and phospholipids.

Further, chemically purified Vitamin E (tocopherols) in high unit dosages, reverse its effect and produces the same symptoms (bone decalcification) as a deficiency. (Vitamin in Medicine, page 735).

The only inference that can be drawn is that you cannot measure a vitamin by one of its fractions, which when isolated cannot act as a vitamin, and may actually cause a reversal of vitamin action by exhaustion of essential synergists.

After considerable research a specific anti-angina fraction in a natural form has been found. Some call it Vitamin E₂. It is probably the real active principle of the E complex. The tocopherols seem only to be useful as an anti-oxidant to protect the real fraction that prevents sudden death from coronary attacks. E₂ is the natural supplement for Nitroglycerin when agina pains are present. Here its function is to conserve the oxygen in the blood thus reducing the cell requirements for oxygen.

Many times hypertension is caused by an excessive amount of cholesterol in the tissue. For this condition a cholesterol metabolizer is required. An extract of buckwheat seed is the best source of a cholesterol metabolizer. This would be similar to the barley water factor and the rice factor so well known as reducers of hypertension. In each case, it is believed, that the result is due to a normalization of cholesterol metabolism, and an elimination of cholesterol from tissue deposits. (Dr. Tilden of Denver, Colorado, was the first to call attention to the bad effects of cholesterol excess; he at-

tributed cancer to the blocking of mineral reactions by reduced permeability of the tissues when their cholesterol content becomes too high).

With a natural cholesterol metabolizer the effect on cholesterol is measurable. Where high blood pressure is due to cholesterol excess, the drop is very prompt and consistent as a rule. The actual blood cholesterol may rise at first by release from the tissues; so may bile-cholesterol for that matter.

Poor muscle tone of the heart can be increased almost immediately by heart protomorphogen. To explain further; briefly, a Protomorphogen may be defined as a comparatively stable but complex group of molecules, linked together by the chemical affinities of mineral material, which by reason of its physical and chemical structure determines the exact plan or pattern by which the component parts of a specific protein are combined. Protomorphogens exert a profound influence upon the mitotic activity and general vitality of every living cell.

Heart Protomorphogen will replace the use of digitalis therapy without the danger of harmful results from an overdosage and there are no contra-indications.

Those who have had occasion to make many heart examinations by means of diagnostic apparatus, such as the Electrocardiograph, Sphygmograph, cardiophone, Endocardiograph, etc., concur in the comment that a functionally sound or normal heart is as common as a perfect set of teeth.

Perfection in either case is dependent upon adequate nutritive factors. We know that its the great exception to find an individual without definite physical marks of deficiency and the heart is no more immune to such deficiencies than are the teeth or the endocrine system.

Now I would like to take up the nervous system of the heart.

The nervous control of the heart is effected by means of a balance of power of the two divisions of the autonomic nervous system—a resultant of the opposing stimuli received from the sympathetic and vagus (or parasympathetic) innervation.

The sympathetic tends to speed up and increase the circulation of blood in response to physiological demands; the vagus inhibits according to similar demands. (The former is the accelerator; the latter the brake).

Exercise, anger and emotions initiate stimuli to the sympathetic. Deficiency of the organic potassium (found in green leafy vegetables) can paralyze the vagus allowing these stimuli to the sympathetic division to have too great and too prolonged an effect. The result will cause the tendency to:

Tachycardia
 Hypertension
 Rapid respiration
 Dry mouth
 Paralysis of muscles of accommodation
 Exophthalmus
 Low gastric acidity
 Gastrointestinal hypertoxicity
 Spastic sphincter
 Leukopenia
 Constipation
 Dehydration

Worry, shock, bad nerves, fright, etc., initiate stimuli to the vagus, and deficiency of the phosphoric radical paralyzes the sympathetics, permitting too great and too prolonged an effect from these causes that initiate vagal stimuli. The result is "vagotonic: with tendency to:

Bradycardia
 Angina Pectoris
 Hypotension
 Irregular respiration
 Excessive salivation
 Spasms of muscles of accommodation
 Enophthalmus
 Leukocytosis
 Gastric and Duodenal ulcers
 Hyperchlorhydria
 Nervous indigestion
 Gastrointestinal hypermotility
 Relaxed sphincter
 Diarrhea
 Spastic Gastrointestinal musculature
 Hydration

It is evident now why heart symptoms and digestive disorders are usually concomitant.

Where the vagus is not opposed and becomes dominant, by reason of partial paralysis of the sympathetic system, the common cause is phosphorus and phosphate deficiency.

Let us here consider the patient having a heart that is somewhat impaired functionally or organically, so that it is unable to respond to demands for reserve effort. Suppose a deficiency of potassium develops with consequent over-stimulation by the sympathetics by reason of the impaired vagus inhibition. The heart will be found to be laboring as if under the demands of exercise—an engine without a governor. Nutritional deficiency here aggravates a situation that could not otherwise be serious.

With vitamin deficiency to starve the endocrines and mineral deficiency to paralyze either or both divisions of the autonomic system, any combination of the two lists of consequences of autonomic unbalance is possible.

In closing, I would like to mention a quotation that I feel brings out the value of natural substances used in the treatment of disease.

Prof. A. H. Stevens, "The older physicians grow, the more skeptical they become of the virtues of medicine, and the more disposed to trust to the powers of nature."

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