

# VITAMIN NEWS

Published by VITAMIN PRODUCTS COMPANY

MILWAUKEE, WISCONSIN

Page 159

## VITAMINS F AND F<sub>2</sub>

Vitamin F is now officially recognized as a member of the Vitamin Family. (See page 422 of the 1949 volume of the Annual Review of Biochemistry.)

Vitamin F was first so named and described by your undersigned editor in these pages, issue of June 15, 1934, as follows:

"Vitamin E from different cereal sources has been found...to have quite different characteristics. This we consider to be due to the (presence of) varying proportions of two distinct vitamins. We have taken the liberty of designating the new one Vitamin F... We consider this 'F' to be identical with Mirvish's (blood) calcium depressor found in oatmeal. It is also present in considerable amount in rye, but there appears to be little in wheat."

It was suggested that the physiological effect of vitamin F was opposite to vitamin D on the serum calcium, and that it might be found a preventive of sunstroke, or an antidote for the toxic effects of overdoses of vitamin D, and a physiological synergist of D, present in natural vitamin D complexes.

In August 15, 1935, the comment was made that the main use so far developed for vitamin F was in the treatment of prostate enlargement. Later, Hart and Cooper reported more exact data on this use. (1) this has put prostate enlargement definitely into the category of a deficiency disease.

Studies in French Indo-China showed the natives to be completely free of prostate disease, whereas the white population showed the usual incidence, indicating the possible effect of other factors than age in the cause. (2) Vitamin A deficiency also has been suspected to be a factor in causing prostate trouble. (3)

Prostate hypertrophy with great frequency becomes carcinomatous (4), so it is with great interest we note that the current issue of the Annual Review of Biochemistry (1949) states that vitamin F destroys carcinogens, and that this may be one of its functions in living tissue (page 422).

The vitamin F complex (the fatty acid group known to carry vitamin F activity) was found to prevent increased susceptibility to malarial infection, and blood fractions rich in this F complex inhibited malaria multiplication. (4) (5) (6)

These effects of stimulating resistance to infective agents by vitamin F are in all probability the effect of the diffusible form of calcium that the F promotes.

The vitamin F effect is associated with certain fatty acids, arachidonic acid commonly being highest in activity, especially if from mammalian sources. Even then it varies from organ to organ, the liver, kidney and adrenal fat being highest.

Recently we have found that fatty acids in phospholipid combination (available from liver) have greater potency and a different activity than the free unsaturated acids. We have provisionally termed this new form of this vitamin complex as F<sub>2</sub>.

F<sub>2</sub> acts as a protector of certain vital tissue components, possible as a part of the phospholipid complex in nerve structures, but more definitely as a protective monomolecular layer for the determinant factors that are essential to the repair and regeneration of all tissue.

(We refer the reader to Protomorphology, by Lee and Hanson, for detailed information on the theories of cell physiology that are responsible for the discovery of F<sub>2</sub>.)\*

Vitamin F<sub>2</sub> promotes tissue repair, to judge from the clinical results. Skin, which is one tissue that must constantly be replaced, responds at once, where a deficiency has caused an induration and degenerative effect.

The most spectacular results however, are seen in some cases of atrophy of muscular tissue, commonly suspected to be of multiple sclerosis type, but apparently due to a deficiency of F<sub>2</sub>. (We cannot state as yet whether all muscular dystrophies are specific results of F<sub>2</sub> deficiency; we assume not.)

It will be noted that here we are encroaching on territory of vitamin E. Let us recall, however, that vitamin F and F<sub>2</sub> are really members of the E complex. The tocopherols are simply anti-oxidizing agents and may be limited to this function. They may act mainly to prevent oxidation and destruction of the fatty acids and their linkages.

The F<sub>2</sub> effect may be mainly in preserving the tissue determinants without which new cells or cell repair cannot take place. These determinants seem to be the catalysts that promote the formation of the specific proteins of the cell, and include trace mineral patterns that are part of the enzyme systems essential to cell metabolism.

It begins to appear that osteoarthritis is a disease partly, at least, a result of determinant loss, because the bone changes seem particularly of the type attributable to a determinant paucity. F<sub>2</sub> in clinical tests seems to greatly enhance the action of other antiarthritic vitamins such as the Wulzen factor, found in unpasteurized milk and sugar cane juice. The new adrenal gland hormone Cortisone (compound E) is already known to be a determinant conserver: it may be its only function; and has been stated to be the long-sought specific remedy for arthritis. (This theory of arthritis was elucidated in Protomorphology two years ago, pages 219, 298.)

The regeneration of red cells in the bone marrow seems to be dependent upon the presence of determinants, too, and pernicious anemia seems to be specifically a state of erythrocyte determinant paucity. The same adrenal factor helps in the treatment of pernicious anemia (Protomorphology, page 295), and a liver extract (apparently F<sub>2</sub>) was effective also (page 295).

We have received some clinical reports suggesting that vitamin F<sub>2</sub> is the missing link in liver therapy for pernicious anemia.

The effect of vitamin A concentrates from both vegetable and animal oil sources has been found to be useful in the treatment of some types of hypertension. This effect was traced to the unsaturated fatty acids in the less refined concentrates, apparently the vitamin F fraction. (Grollman, Grollman, Recent Progress in Hormone

---

\*Available from us at the price of \$8.50—shipped on approval.

Research, Academic Press, Vol. 1, 1947, page 383.) The purified vitamin A had lost the effect. (As is usual with any food product—the more refined, the less useful.)

Zaicsek and Weiser of Budapest discovered in 1934 that feeding rye to test animals caused muscular lines of development in distinction to the fatty type of growth in wheat fed animals, and attributed the difference to an hitherto unknown vitamin present in rye. That vitamin was no doubt our old friend vitamin F. For vitamin F (as the physiological combined form of F2) acts as a protector of the determinants which are the catalytic activators of cell mitosis, and which, if permitted to be enzymatically removed too freely, will result theoretically in a failure of development or of maintenance of any organ. (See Protomorphology for details.) Guanidine is a fatigue poison, an end product of muscle activity, and vitamin F is known to activate the conversion of guanidine back into the muscle component known as phosphagen, with the help of thyroid hormone. (Morse, Applied Biochemistry, 2<sup>nd</sup> Edition, Saunders, 1927, page 585. Morse attributes the cooperative effect to the unsaturated fatty acid component of cod liver oil—vitamin F complex to us.)

Here we have the explanation of why some symptoms of F deficiency are also listed as those of thyroid inactivity—dry skin, loss of hair, constipation, muscular pains and eczematous tendencies. Maybe vitamin F is the missing link in getting the conversion of fat to muscle that we so long have expected thyroid to accomplish. No wonder we got toxic reactions instead of what we wanted.

Many users of vitamin F tell us that it eliminates the after-effect of stiff muscles often following unusual muscular activity. It should, if it aids in the reconversion of muscular waste products that are as toxic as guanidine.

Remember the Finns habitually eat rye bread, and they walk away with first place regularly in the Olympic games. In 1924 Finns took the ten first places in the distance races. "MEN OF IRON," said Alfred McCann in his book, The Science of Keeping Young. (Published in 1926, now suppressed by the copyright owner, we believe by reason of McCann's clear indictment of white flour.)

The new vitamin found in sugar cane and raw milk, known as the anti-arthritis factor or the Wulzen-Van Wagtenonk factor, seems to have a parallel effect to the F2. It promotes the availability of easily hydrolysable inorganic phosphorus to form phosphagen and adenosine triphosphate. (Journal Biol. Chem., 165:449, 1946; and United States Patent #2439914.) It should probably be considered as a special form of vitamin F as found in the milk complex with vaccenic acid, and in sugar bearing plant juices.

The clinical experiences with the anti-arthritic factor in treating arthritis are parallel with results of tests with our F complex—some are benefited and some report an aggravation of symptoms. At the moment we are inclined to believe those that find aggravation of the arthritic symptoms are low in phosphorus, and need to get their phosphorus-calcium balance adjusted before relief is possible. Low

phosphorus states in test animals are uncommon, because they are not fed refined sugar products or white flour. That may be the reason the animal tests do not apply here to the human subject.

The clinical uses of vitamin F complex as CATAPLEX F, and the new vitamin F2 may be tabulated as follows:

#### Uses of CATAPLEX F

(1)—As synergist of vitamin D, to insure delivery of calcium to bones, teeth, muscle, nerve or phagocytes in a form that is diffusible—probably as calcium bicarbonate.

Chalky teeth in children usually become hard and translucent if the F is supplied with calcium lactate (one tablet of F and three of five-grain Calcium Lactate, taken on arising in morning, 15 minutes before food). Vitamin C aids this effect. A 60 day treatment will demonstrate this reaction.

(2)—As a palliative (and often affording complete relief) in cases of prostate enlargement. Apparently this disorder is a deficiency state, for it very consistently clears up under treatment with vitamin F—three tablets per day. Vitamin C again is synergistic, probably by its promotion of capillary circulation.

(3)—All states requiring more diffusible calcium in the tissues.

#### Uses of VITAMIN F2

(For experimental use—a new product)

(1)—Diseases where there is a definite failure of tissue regeneration. Muscular dystrophies, creeping paralyses, anemic states, weakness and atrophy. To be used in connection with all known physiological remedies, such as vitamin E, amino acids, special diets, with definite restrictions on refined foods, processed cereals, soft drinks, all white sugar products, favoring raw foods, rare meats, vegetable juices.

#### Bibliography

1. Report #1, Lee Foundation for Nutritional Research, Milwaukee, 1942.
2. Le Roy des Barres, A., Bulletin Academy de Medicine; Paris, 117:367, 1937.
3. Moore and Mark, Journal Experimental Medicine, 64:1, 1936.
4. Trager, W., Proc. Soc. Exper. Biol. & Med., 64:129-34, 1947.
5. Axelrod et al., J. Biol. Chem., 175:265-74, 1948.
6. Trager, W., J. Exper. Med., 85:663-83, 1947.

---

THE STATEMENTS HEREIN MAY NOT AGREE WITH CURRENTLY ACCEPTED MEDICAL OPINION.  
NEVERTHELESS THE PUBLISHER BELIEVES THEM SOUND.

---