



© 1974 by George Ohsawa Macrobiotic Foundation  
1544 Oak Street, Oroville, California 95965

First published 1974

Second printing 1977

*In accordance with the Bill of Rights, this publication is issued for information purposes only, is not labeling for any product and is copyrighted under international law which prohibits reprinting in whole or part without written permission from the George Ohsawa Macrobiotic Foundation.*

ISBN Number 0-87040-290-3

## CONTENTS

### Part I

#### "Vitamin D<sub>2</sub>"

Introduction	1
A Thousand and one Chronic Illnesses	1
How are these chronic epidemic illnesses inter-related?	2
Calciphylactic Hypersensitivity and Pathological Calcification	2
"Vitamin D" and Pathological Calcification	4
Relative Toxicity of Various "D"-isomers	5
Irradiated Ergosterol and TOXISTEROL	7
A Vitamin-Turned-Hormone	7
Rickets--the first Air-Pollution Disease	9
Solar Irradiation, Skin Pigmentation, and Fish Oil	10
How do Sunshine and Calciferol regulate Cholesterol Metabolism?	11
Irradiated Ergosterol, Kidney Stones, and Urinary Calculi	13
Irradiated Ergosterol and Coronary Heart Disease	13
"Idiopathic Hypercalcemia of Infancy"	15
Incidence of Idiopathic Hypercalcemia	17
Other Documented Manifestations of D <sub>2</sub>	18
Early Experiences with Mega-Vitamin D <sub>2</sub> - Therapy	19
"Vitamin D" and the FDA	20
Delivered Potency of Irradiated Ergosterol in Milk	21
How much "Vitamin D" is 400 International Units?	22
Some Leading World Authorities on "Vitamin D" Express their Views	24
Summary	25

illnesses in industrial nations.

This figure is a hypothetical explanation of an experimentally observable effect of "Vitamin D" on cholesterol metabolism. Indeed, evidence in the biochemical literature indicates that cholecalciferol ("D<sub>3</sub>") may be a fundamental hormone regulating cholesterol metabolism as well as calcium homeostasis, and "D<sub>2</sub>" often interferes with this natural hormonal mechanism. In support of this hypothesis is the readily verifiable fact that the elimination of rickets directly coincides with the upward epidemic swing of coronary heart disease. Has "vitamin D<sub>2</sub>" eliminated an illness of infancy while creating a more severe adult illness? Is it possible to prevent rickets in all infants without inducing pathology in adults?

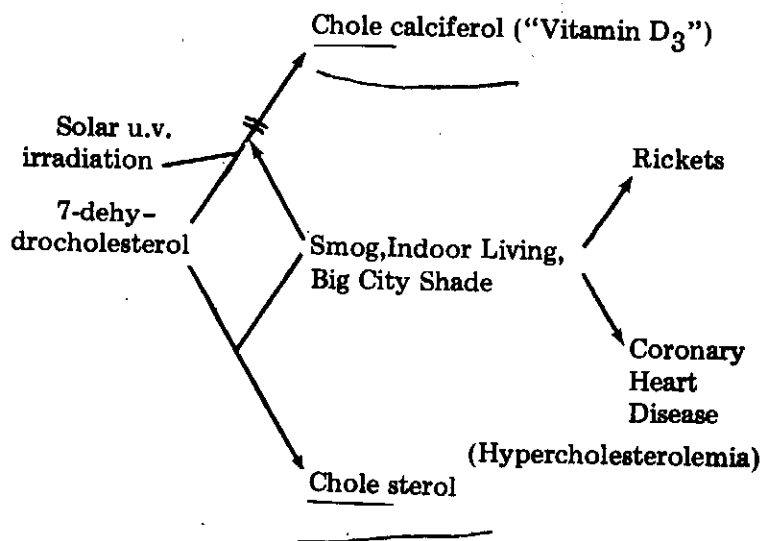


Figure 3: Relationship between Cholesterol and Calciferol, Rickets and Coronary Heart Disease.

### Irradiated Ergosterol, Kidney Stones, and Urinary Calculi:

Within a few years after the introduction of irradiated ergosterol reports began to appear in the medical literature linking excesses of "D<sub>2</sub>" to kidney stone and urinary calculi formation. In the appended bibliography on toxic manifestations of irradiated ergosterol are included 44 references to this toxic manifestation. For many years it was claimed that the formation of urinary and renal calculi only occurred with very large doses (greater than 50,000 I.U./day). Within the last year, however, Dr. W.H. Taylor, Director of Studies in Chemical Pathology at the United Liverpool Hospitals in England has presented evidence that "self-administration of vitamin D (800-2000 I.U./day) should be included among the aetiological factors (promoting the formation of renal calculi.") [*Clinical Science*, 1972, 42: 515-22]

### In a Recent Communication to the FDA, Dr. Taylor wrote:

"Since the publication of this paper we have accumulated further evidence, as yet unpublished, that the continued administration of amounts of vitamin D of the order of 500 to 1,500 I.U. daily over several months promotes a hypercalciuria in a proportion of subjects.

...I would regard 100 I.U. daily as being a perfectly adequate supplement for any normal adult. I would regard the safety margin as being slight so that 400 I.U. daily, if combined with a diet rich in foods containing natural or added vitamin D, could place a normal adult at risk of hypercalciuria and then of renal stone formation."

### Irradiated Ergosterol and Coronary Heart Disease:

The vast amount of evidence linking the use of irradiated ergosterol to the incidence of coronary heart disease is staggering in its implications. Adult deaths from heart and artery disease today accounts for about 70% of the

deaths due to adult diseases. This is especially alarming when we consider the fact that (prior to the introduction of irradiated ergosterol in human nutrition, coronary heart disease was a rare disease)

During the 1930's and 40's, as coronary heart disease began its upward swing to become the *number one* cause of adult deaths in industrial nations, many warnings were issued regarding the relationship between the use of irradiated ergosterol and arterial calcification associated with cardiovascular degeneration. These warnings might have been heeded if we had not found ourselves thrust into the global conflict of World War II.

The Japanese experience at the turn of this century when beri-beri decimated the most powerful navy in the world was fresh in our minds. In order to avoid the possibility that a nutritional deficiency disease might result in our defeat, irradiated ergosterol became an essential ingredient of all military "C"-rations. The results of this tragic mistake are well-documented. By the mid-1940's, this illness which previously afflicted only older people became common among middle-aged military personnel. During the war years very few reports on "D<sub>2</sub>" toxicity were published.

By the time of the Korean conflict, chronic poisoning by irradiated ergosterol had become so common that autopsies of young soldiers killed in battle demonstrated the presence of cardiovascular degeneration (cholesterol and calcium deposits in the arteries) in 80 to 90% of these young men!! A number of animal experiments have clearly demonstrated that even relatively small amounts of "vitamin D" can significantly increase blood levels of cholesterol in addition to inducing abnormal calcification. For instance, Professor L.M. Dalderup of the Netherlands Institute of Nutrition has reported (*The Lancet*, March 23, 1968, P. 645) calcified, cholesterol-laden vascular lesions in rats fed only 250 I.U. of "D<sub>3</sub>" per day. The liver

calcium content was up to ten times normal, and the blood cholesterol levels were very significantly increased, especially in male animals (from 239 mg% to 360 mg%!).

The hypercholesterolemic effect of "vitamins D" is significantly enhanced by the presence of dietary cholesterol, and this is yet another argument against fortifying milk (one of the richest natural sources of cholesterol--with this hormone)

Dr. Helen B. Taussig from the Johns Hopkins Hospital has recently called attention to the fact that abnormal cholesterol levels often accompany idiopathic hypercalcemia of infancy and that this condition is in many respects similar to the adult illness, coronary heart disease. Her paper, which was published in the *Annals of Internal Medicine* (vol. 65, No. 6, Dec. 1966), is entitled, "Possible Injury to the Cardiovascular System from Vitamin D," and suggests a causal relationship between excesses of "D" and coronary heart disease. Dr. Taussig is one of the world's outstanding pediatricians and is well-known for her important reports on thalidomide-deformed infants.

"Idiopathic Hypercalcemia of Infancy" - A New Manifestation of Poisoning by Irradiated Ergosterol: During the early 1950's, medical science observed the emergence of a new illness of infancy which is characterized by very high levels of blood calcium, and is often accompanied by increased levels of cholesterol in the blood. The illness is believed to be due to poisoning of "hypersensitive" infants by "vitamins D". As is to be expected, fair skinned children are far more sensitive to vitamin D than are dark skinned infants, and infants receiving adequate sunshine are probably even more sensitive.

Idiopathic hypercalcemia of infancy may result in severe mental retardation due to abnormal development of the bony structures of the face and head; it may result in irreversible damage to the heart and blood vessels due to the abnormal deposition of bone matter in these regions;

and it may result in death of the infant due to generalized arteriosclerosis of infancy, in which bone matter is abnormally deposited throughout the arterial system of the infant. The illness may go *undetected* during infancy only to become manifest as mild to severe mental retardation later in life. Occasionally the severe imbalance between Magnesium (Yin) and Calcium (Yang) may give rise to severe convulsions of the infant which can be controlled only by the administration of cortisone (the steroid hormone antagonist to calciferol) which causes increased urinary excretion of calcium in combination with magnesium replacement therapy.

In Great Britain, during a period when D-“fortification” of milk was just twice as great as in the United States at the present time, hundreds of cases of idiopathic hypercalcemia were recorded. (Reduction of the level of milk fortification from 800 I.U. to 400 I.U. per quart, and a general halving of all D-supplements was followed after 2 or 3 years by a reduction in the incidence of this illness.) Table I, taken from a British Pediatric Association Report in *The British Medical Journal*, 27 June, 1964, lists the number of reported cases in England from 1953 to 1961. A small number of infants continue to be poisoned by excesses of “vitamin D<sub>2</sub>” each year in the United States, and even more are recorded in England, the only country with statistics regarding the frequency of idiopathic hypercalcemia. Of the 50 cases reported in England in 1960-'61, 14 (28%) were receiving no medicinal vitamin D supplements before the onset of the disease. These infants were apparently so sensitive to “vitamin D” that the amount added to milk and baby foods was toxic to them!

Table I: Incidence of Idiopathic Hypercalcemia in England (1953-1961)

Survey	Period	Months	Reported Cases	Cases per Month
1st	1953-5	30	216	7.2
2nd	1959	12	82	6.8
3rd	1960-1	17	50	3.0

Incidence of Idiopathic Hypercalcemia and The Use of Irradiated Ergosterol: During the period when milk was enriched with the natural hormone vitamin D<sub>3</sub>, by direct ultra-violet irradiation of the milk to give a delivered potency of 400 I.U. per quart, there was not one reported case of idiopathic hypercalcemia in the United States! By 1953, the addition of irradiated ergosterol to milk became the adopted method of “fortification,” and within a few years, several cases had been reported. From 1953, when the illness was first documented subsequent to an increase in “D<sub>2</sub>” fortification of infant foods in England, until 1958, there were only 12 cases of this illness reported in the United States.

In 1967, workers from the Johns Hopkins Medical School reported 15 cases, and in 1968 a report from the University of Rochester School of Medicine indicated that they had seen 12 cases of this illness in recent years. Dr. Mildred Seelig, while a Research Associate in Pediatrics at Maimonides Medical Center, reported several cases of the severe form, and one physician has reported four cases in a single family.

In the 1965 May issue of the *Texas State Journal of Medicine*, two doctors from Brownsville Texas reported grand mal seizures in a seven-weeks-old infant due to idiopathic hypercalcemia induced by only 200 I.U. of D per day while being breast fed. Again, there are no statistics regarding the frequency of idiopathic hypercalcemia in

## Coronary Heart Disease

Some Leading World Authorities on "Vitamin D" Express Their Views: The proposed legislation making mandatory the "fortification" of *all milk* with "vitamin D" makes no allowance for differences of opinion regarding the toxicity of "Vitamin D Milk," and allows no freedom of choice in this matter. It fails to recognize the fact that restriction of D-"fortified" milk is an important feature of the most successful dietary approach to the problem of coronary heart disease, i.e., the anti-coronary clubs of America as formulated by Dr. N. Jolliffe, founder of these clubs.

It also fails to recognize the vast body of information which indicates that even small amounts of "vitamin D" may be harmful to any individual predisposed to the development of hypercalcemia. Since hypercalcemia is a frequent complication of the use of diuretics to control high blood pressure, and often accompanies female breast cancer, a large portion of our population would be placed at risk by universal "fortification" of milk with "vitamin D." Since the only known purpose for "D"-fortified milk is to prevent rickets among very young infants and to aid in new bone formation during pregnancy, it seems superfluous and even dangerous to create a situation in which all adults who drink milk must consume this potentially dangerous hormone.

In order to ascertain the potential danger associated with this practice the Committee for the Cessation of Fortification of Food Products with Calciferol Hormones has conducted a comprehensive survey of the medical literature concerning this subject and has corresponded widely with leading authorities on the toxicity of "vitamins D." The following quotations are but a few of the many expressions of concern over this serious problem.

Professor Hans Selye, M.D., Ph.D., Nobel Laureat in Physiology and Medicine:

You may well imagine that, after all the work I have done on the harmful effects of vitamin D overdosage, I fully agree with your concern about the abuses resulting from over-the-counter sale of vitamin D and its derivatives.

As a matter of fact, I have found out to my consternation that it is quite impossible in the Montreal area to obtain skim milk without vitamin D supplements and, since I consume a large amount of skim milk, this is even of personal concern to me. (Personal Communication, Jan. 17, 1973)

Professor W.F. Loomis, M.D., Ph.D.:

"...Putting a hormone in milk, for male adults, etc., especially in sunny climes, could be quite dangerous because unphysiological." (Personal Communication, Jan. 17, 1972)

### SUMMARY

Irradiated ergosterol is a very toxic unnatural growth-promoting steroid hormone which induces unnatural mineral deposits throughout normally soft tissues of the body. The addition of this hormone to milk significantly increases its toxicity, and "Vitamin D Milk" may be a significant contributing factor in the development of many chronic adult illnesses.

The medical literature contains many reports on the manifestations of poisoning by irradiated ergosterol. These reports include many deaths, as well as mild to severe mental retardation, severe mental depression, ferminization ?

Feminization next page →

(gynecomastia), arteriosclerosis, kidney stones, urinary calculi, hypertension, tooth decay and difficult eruption of teeth, deafness through fusion of auditory bones, production of convulsions (depletion of vitamin A), thyroid gland degeneration, and diabetes. Appended is a partial bibliography on the toxicity of this unnatural hormone-like chemical.

For many years it was believed that "vitamin D<sub>2</sub>" is toxic only in large excess. More recent experience has demonstrated that as little as 200 units/day may be acutely toxic to some infants, 2000 units is definitely toxic to most, and 1800 units adversely affects growth rates during infancy. Adults are apparently more sensitive to "D<sub>2</sub>", toxicity than are infants, and evidence has been presented that as little as 500 units per day may produce hypercalciuria in a proportion of normal adults within a few months time.

On the other hand, the natural hormone, as it occurs in fish liver oil, has no demonstrated toxicity, and readily prevents and cures rickets, even among dark skinned or premature infants with minimal exposure to sunlight. Information summarized indicates that a return to the use of fish liver oil u.v. irradiated milk during infancy and pregnancy would safely prevent rickets and osteomalacia. (Adults other than pregnant women should not use u.v. irradiated milk, but may safely take fish liver oils if there is any reason for insufficient exposure to sunlight.)

## Part II

### INTRODUCTION

We have seen that, since the time of its introduction in 1927-'28, irradiated ergosterol has been associated with numerous conditions in human pathology involving unnatural mineral deposits and abnormal cholesterol metabolism. Yet even today, the majority of practicing nutritionists and physicians are not aware of the facts that: 1) "Vitamin D" is not a true vitamin, but is a steroid hormone. 2) Irradiated ergosterol is an unnatural form of this hormone. 3) (The delivered potency of irradiated ergosterol is increased manifold when added to calcium-rich foods.) 4) 400 International (Rat) Units of "Vitamin D" is dozens of times greater than the amount of the natural hormone in milk.

A number of environmental factors are known to significantly increase the toxicity of irradiated ergosterol, and in this section we will discuss some of these factors.

#### Increased Sensitivity by Use Through Successive Generations:

Shortly after the introduction of irradiated ergosterol, three biochemists, R.F. Light, G.E. Miller, and C.N. Frey, began studying the effect of "Vitamin D" overdosage in laboratory animals. By 1930, these experimenters had a number of animals which had been subjected to fairly large doses of irradiated ergosterol, but displayed no immediate pathology. They then determined to discover the effect of prolonging their experiments through several generations, using sub-toxic quantities of irradiated ergosterol. They discovered that second-generation animals were more sensitive to the toxic effects of irradiated ergosterol

in Her attempt to maintain Health and Harmony. Sickness and unhappiness are always the end result of war, and war on Nature is no different. Will we learn before it is too late?

†

**SUMMARY CHART**  
**Some Suggested Environmental Factors**  
**Involved in the Etiology of Pathological Calcification**

