Editorial

"Toxic" Vitamins

The safety of vitamins has been clearly demonstrated by the toxicological literature and further by the experience of orthomolecular physicians over the past forty years. Why then, is the public subjected to periodic outbursts of information about how toxic vitamins are? We do not have similar outbursts against the use of drugs even though vitamins have a zero death rate while drugs in the United States alone kill 106,000 patients in hospitals annually.

The Food Standard Agency (FSA) in England released a press statement early in May, 2003, entitled "New FSA advice on safety of high doses of vitamins and minerals." Why they titled their statement "new" puzzles me since this is the sort of advice we have been getting from various government agencies for the past 50 years.

The toxicological facts about vitamins gathered over the past 60 years do not support their advice. It is advice which follows from the vitamins-as-prevention paradigm established over 100 years ago and rejects the extensive research over the past 50 years that established the vitamin-as-treatment paradigm. The press release was dutifully copied and reprinted in the mass media with very little, if any, critical examination of the claims made in the FSA statement. The headlines in the *National Post*, Canada, May 13, 2003, ran: "Searching for a Magic Bullet;" The *Globe and Mail*, Canada, May 31, 2003, went under the heading "Too Much of a Good Thing?"; the BBC News, May 7, 2003, harked a "Warning Over Vitamin Doses"; and *The Times*, England, May 8, 2003, warned "Vitamins Can Damage Your Health" and so on. An EMedicine report on "Vitamin Toxicity" by Mark Rosenbloom carries the same information.

The FSA recommends that while most vitamins are safe a few have to be taken with great caution. The FSA states it is an independent food safety watchdog but later on adds they are accountable to Parliament through Ministers of Health. A board that is appointed and is supposed to have a wide range of relevant skills and experience leads it. The readers of this issue will be able to deduce on their own what skills are represented on the board. In my opinion they did not include any relevant clinicians experienced in using vitamins as supplements. There are not enough clinicians so experienced in Great Britain to form such a board. Orthomolecular medicine in Great Britain has been thoroughly rejected for years.

A paradigm is a system of thought or ideas based on observations, hypotheses and theories. It is an attempt to coordinate the acceptable observations about a topic, which makes some sense to its practitioners. Paradigms are evanescent since newer observations will make older paradigms out of date and mostly wrong. But replacing one paradigm by a newer and better one does not happen smoothly. It occurs in quantum leaps. The old paradigm is taught and studied and defended vigorously by scientists in that area. It will be changed with great difficulty because it has a large body of adherents who will protect its main hypotheses to the end. When there is sufficient new information and enough adherents to the new information there may be a shift to the new paradigm, which in turn will be replaced. Paradigms are very useful and serve science well but as they become well established they prevent new information from being gathered and from being published in the literature, which is part of that paradigm.

In the field of vitamin use and theory the first paradigm is called the vitamin-as-prevention (VAP) paradigm. It was introduced after many years against the opposition of the medical establishment. Here is an example. In 1916, the U.S.A. Department of Agriculture announced that Dr. J. Goldberger had discovered the cause of pellagra; it was caused by a diet deficient in something. Around the same time two U.S.A. physicians, from the establishment, announced that they had discovered the

cause of pellagra; it was caused by the bite of the stable fly. As late as 1950 I read in a medical textbook that it is alleged that niacin cures pellagra.

The principles of VAP paradigm are (1) that vitamins are needed only in very small amounts, as declared by the recommended daily doses in common use; (2) that they are used only to prevent certain classical deficiency diseases. Thiamine prevents beri beri, vitamin C prevents scurvy, vitamin D prevents rickets, and vitamin B_3 prevents pellagra. If these principles are gospel truth it follows (1) that large doses, above the recommended vitamin doses are not to be used, are contraindicated, may be dangerous even though the evidence for this is non- existent, and indicates that the clinician is probably not fit to practice medicine. Several of my colleagues lost their licence because they used large doses of vitamin C; (2) that giving any vitamins to patients with diseases not known to be vitamin deficiency diseases is contraindicated. The VAP paradigm is accepted by almost every nutritionist, physician, government agency and food board such as FSA. The statement issued by the FSA is a typical statement from adherents to this paradigm.

The modern paradigm is the vitamins-as-treatment paradigm (VAT), which is defined by a different set of principles. These are: (1) that vitamins are therapeutic for a large number of conditions not considered to be vitamin deficiency diseases; (2) optimum doses are used which vary in quantity but are much larger than those recommended by the original paradigm and by the recommended daily requirements. The best example of the VAT paradigm in practice is the use of niacin, which is used in 3 to 9 grams dosages daily to lower total cholesterol, to elevate high-density lipoprotein cholesterol and to lower elevated triglycerides. This unexpected property of niacin was reported in 1955[1] and marks the beginning of the new VAT paradigm.

There were several pioneers ahead of us. The first pioneers were Drs. Evan Shute and Wilfrid Shute[2] from Ontario who found that vitamin E was very useful in treating and preventing heart disease. Their work was vilified, ignored and suppressed. At about the same time Dr W Kaufman[3] reported that niacinamide was very helpful for the arthritides and for many of the conditions associated with aging. His work was totally ignored. Then Dr. Fred Klenner,[4] North Carolina, found that very large doses of vitamin C were very therapeutic for a large number of conditions including cancer, viral and bacterial infections, multiple sclerosis and more. His work was totally ignored by medicine but is enjoying a renaissance especially for his treatment program for multiple sclerosis and his use of large doses of vitamin C for cancer. Our niacin cholesterol work was not ignored due to a series of talks I gave the Mayo Research Foundation in 1955. During the last farewell dinner I told Dr. Howard Rome about our work. He passed it on to the Chief of Medicine. His senior resident, Dr. William Parsons,[5] became interested and as a result of this interest our work was quickly confirmed. Coming from the Mayo Clinic it carried much more weight and of course it was easy to confirm whether cholesterol was lowered or not. Other pioneers included Dr. Irwin Stone,[6] Dr. Linus Pauling[7] and recently Dr. Bruce Ames.[8]

Information about drugs released to the public in the Compendium, in letters to doctors, in advertisements and in press releases is usually accurate. The FDA in the United States and the FDD in Canada vet efficacy information. Side effects and toxicity information is vetted by the manufacturers of the drugs, the companies that hold the patents. There is no doubt that the descriptions in the compendiums do not appear until their proprietors have rigorously examined them. Vitamins have no proprietors. They are not patentable. Efficacy claims are vetted by the same agencies as

those vetting drugs but descriptions of efficacy and toxicity are not. This is why descriptions in the Compendiums have to be read very carefully because they carry information which is wrong or out of date. We need someone or some agency to do for the nutrients what the drug companies do for their drugs. Unfortunately, university departments of nutrition, and the companies that sell the vitamins have not undertaken this role. This special issue of the *Journal of Orthomolecular Medicine* is a first attempt to correct the record. Clinicians and scientists who are familiar with vitamins, with the literature and with long experience in having used them in treatment, will discuss the vitamins that are commonly used in the VAT range.

At the beginning of this editorial I posed the question, "Why are we subjected to periodic outbursts of information as to how toxic vitamins are?" I think the reason is fairly obvious. The attack on the safety of vitamins is really an attack on the efficacy of these nutrients. If the critics really conceded that the vitamins have therapeutic properties they would not be attacking their efficacy. It is an indirect method of downgrading the value of orthomolecular medicine. That means that the protestations we all make about the uninformed criticisms of the critics will have little effect. We must emphasize the therapeutic value of vitamins when used properly. We must continue to study their therapeutic properties, and as the drug companies do with their drugs, repeat the message that they are valuable. We cannot advertise but we can publish. My complaint against my colleagues is that having published a paper once or twice reporting the advantages of vitamins they are content to sit back and do nothing more. This must stop.

I urge you all to do the following: (1) research and publish your studies in orthomolecular medicine and psychiatry; (2) continue to protest the false claims made by the opposition. Use all the media you have access to. The *Journal of Orthomolecular Medicine* will consider all manuscripts. The web site, International Bulletin Board for Orthomolecular Medicine (IBBOM), can become a very valuable worldwide medium. Please use it. http://www.orthoeurope.com/ IBBOM/index.php

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