Editorial

Vitamin Toxicity

The English language can be so imprecise that it is possible to convey a false message while literally adhering to the truth. This kind of language is favored by a few critics of vitamin therapy for conditions they do not recognize as requiring vitamins in any dose above the minimal recommended allowances. They use language designed to frighten both physician and others unfamiliar with the vitamin medical literature.

I will illustrate my argument by referring to the medical literature. One major source of confusion is to use the words "possible" or "may," for example ascorbic acid may cause pernicious anemia, according to Herbert. He found that by using the wrong method for determining the amount of ascorbic acid in a solution outside the body, ascorbic acid destroyed vitamin B12. Other scientists using accurate methods found that ascorbic acid did not destroy vitamin B12. However, Herbert's claims, widely publicized in the *Journal of American Medical Association*, have taken root. Yet, what did Herbert say? He said that vitamin C may cause pernicious anemia. He did not say it would do so, that out of 10,000 people using vitamin C, a proportion, let's call it X percent, would suffer pernicious anemia. Had Herbert wanted to be precise he would have written — it is possible vitamin C will cause pernicious anemia, but the probability it will do so is X percent. In other words, he confuses "possibility" with "probability." It is possible some day a human may evolve who will fly by flapping his/her ears, but the probability this will occur is infinitesimally low. Scientists have a duty to be as rigorous in their speech or writings as they are in their research.

What is X, the probability vitamin C will cause pernicious anemia? Since no cases so far have been reported, we must assume it is less than any small number. But the average consumption of ascorbic acid in the U.S.A. is 1 ½ grams per person per day. Assuming only 25 percent of the population use vitamin C (the mean dose is somewhere around 6 grams per day). This is well above Herbert's pernicious anemia producing dose, i.e. about 60 million Americans are at risk for getting pernicious anemia. According to Herbert, X is thus less than one in 60 million. Even if we accept Herbert's one anecdotal case, we come to an incidence of 1 in 60 million. Thus, although it is possible to become anemic by using ascorbic acid, your risk is one sixty millionth. I doubt there are any other substances that safe.

Another confusing bit of logic is to assume

something can happen theoretically, then forget this was a wild assumption and begin to warn people it can happen, it is possible. Herbert has warned us all we may get kidney stones from taking ascorbic acid. The theoretical reasoning goes as follows. Some kidney stones contain oxalate. Some ascorbic acid is converted to oxalate in the body, therefore it is possible ascorbic acid will cause kidney stones; this has not been shown to happen. Most review books on kidney stones do not even have ascorbic acid in their index. As there have been no published cases proving ascorbic acid has caused stones, one can estimate the probability for such an occurrence is again under one chance in 60 million. A third way to confuse everyone is to lump all vitamins together as if they were all identical. There have been critical articles under a title carrying some terrible word and vitamins. Then in the article accounts are given of the toxicity of the fat soluble vitamins, especially vitamins A and D. Vitamin A can accumulate in the body when very large doses are used, yet people have used 50,000 IU or more per day with no toxic effects. The dangerousness of vitamin A is grossly exaggerated — no deaths have been recorded in many years. When doses remain within the recommended ranges of Orthomolecular medicine, vitamin A is almost as non toxic as is vitamin C.

The toxicity of vitamin D is also discussed, but the critics fail to tell us it is vitamin D2 which can have some toxicity, not vitamin D3. Vitamin D2 was the form used to fortify milk products; currently D3 is used. D3 is present in fish liver oils. When used in the form of fish liver oil it is highly unlikely anyone could take enough to be harmed.

These articles assume that the very slight toxicity for vitamin A and D3 overdose applies to all other vitamins. They assume readers having been frightened of one or two will be frightened of all the rest.

The final way of confusing readers is to talk about toxicity with no reference to dose used. In other words, if one can be convinced there is any toxicity, that fear will remain attached to vitamins at any dose.

When vitamins are used in doses recommended by Orthomolecular physicians, you can be assured they are safer than almost any other tablet, powder or capsule sold in any store. There may be undesirable allergic reactions, usually to the other ingredients in these preparations, and very rarely to the vitamin itself, but then there is nothing absolutely safe or free from the allergy-inducing capability.

On March 22, 1983, I wrote to Dr. Victor Herbert requesting he present me with evidence, such as from double blind controlled experiments, to bolster his contention these vitamins are toxic. At the time of writing, June 6, 1983, I have received no reply. I assume there is no evidence and it was impossible (with 100 percent probability) that he could reply.

When anyone tells you vitamins are dangerous, ask: (1) which vitamin, (2) at what dose, (3) how many cases have been reported in the medical literature, (4) how many showing such toxic reactions died. Having received this information you will be able to make an intelligent decision whether or not to use that vitamin. You will balance that information against the potential benefit by using the vitamin in recommended doses against the toxicity to yourself if the condition from which you suffer is not treated with vitamin therapy.

A. Hoffer, M.D., Ph.D.