

Nutrient supplementation in Australia

EVEN the most conservative estimates now place nutrient supplementation as a major health phenomenon among Australians. The Australian Health Survey of 1977-1978 indicated that 12.1% of the population consumed vitamin and mineral supplements during the two days before the survey.¹ The National Heart Foundation's Risk Factor Profile Study of 1980, the first of a series of regular surveys conducted by the Foundation, showed that 19.3% of adult Australians in capital cities regularly used these preparations.² In this issue of the Journal (page 579), Worsley and Crawford report that, in a representative sample of adults in Adelaide, South Australia, 37% of men and 53% of women had taken a supplement during the month which preceded the survey. It is not possible to infer longitudinal time trends in the consumption of dietary supplements from these studies, because of the different methods and sample times employed. Nevertheless, industry figures indicate rising sales of these products. Repetition of any or of all of these surveys from time to time is certainly needed if the phenomenon is to be monitored.

What is important at present, however, is to define whether there are genuine health reasons for supplementation of the diet. If there are no such reasons, why does the phenomenon occur, and is it placing the population taking supplements at health risk? In the study of Worsley and Crawford, supplement-takers were endeavouring to prevent or ameliorate minor symptoms, such as those of colds, stress, depression or hangovers, as well as seeking more nebulous goals, such as the general maintenance of health. Women tended to hold more specific beliefs about diet supplementation than men; however, the prevalence of group or family use suggested that there was considerable prophylactic, rather than therapeutic, use of supplements. To some extent, this finding may reflect insecurity on the part of those taking supplements about the quality of their food supply, and this anxiety, in turn, raises important questions about the level of knowledge about food in the community. This is especially relevant, since there is

no evidence that specific nutritional deficiencies arise when food is abundant, except in populations which are particularly at risk (for example, pregnant women, those taking certain medications, the elderly, alcohol abusers, and food faddists). Other possible reasons for dietary supplementation, such as the quest for better and better health, are explored in a recent book, entitled *Use and Abuse of Vitamins: Food versus Pills*.³ Not least in importance of the reasons for dietary supplementation, is the vulnerability of people to pseudoscience and their proneness to errors in health logic — points discussed by Whelan and Stare in their book, entitled *The 100% Natural, Purely Organic, Cholesterol-free, Megavitamin, Low-carbohydrate Nutrition Hoax*.⁴ A major difficulty arises when those who give persuasive advice on supposedly scientific grounds actually give it on the basis of non-scientific "alternative" frames of reference or personally held beliefs.

The lay public also appears to have difficulty in weighing up the risk/benefit ratios of supplementation. Even if a supplement does have a small prophylactic or therapeutic benefit as self-medication, its risks, costs and nuisance value may not be outweighed by this benefit. An example is the sodium load that is ingested with many ascorbic-acid preparations and its effect on the risk of hypertension when set against the minimal amelioration of the common cold that might result. Similarly, the risk of developing secondary copper deficiency from excessive zinc supplementation, and that of developing neuropathy from megavitamin pyridoxine therapy, may both outweigh any potential benefits of these products.^{5,7} Moreover, the use of supplements for as long as 10 to 30 years, especially if started in childhood, may lead to hazards not revealed in the short-term experience, and it would not be surprising if a new crop of self-induced diseases emerged over the next few years.

People are easy prey to "buzz" words such as "natural" when applied to vitamins and minerals. What is "natural" about these compounds, of course, is that they are found in food. It is hardly natural if, as pills, vitamins and minerals are

ingested unassociated with the particular physical properties and chemical components of the food of which they are "naturally" a part. Furthermore, synthetic compounds can be chemically identical to those found in nature. A particularly disturbing error in thinking has been the view — even among medical graduates who ought to know the principles of physiology and pharmacology — that if a little of something is good, more of it is better. This view has become part of the dogma known as "orthomolecular medicine". But in reality, while physiological amounts of essential nutrients are indeed vital to health, in large quantities they may take on pharmacological or toxic properties.

Indeed, one of the major questions which must be asked about the phenomenon of nutrient supplementation is: Why have doctors been unable to counter the trend? One reason is presumably that medical graduates are not adequately trained in clinical nutrition,⁸ and are, in particular, insufficiently familiar with food composition and the recommended dietary intake guidelines.⁹ The study of nutritional biochemistry (which focuses on the handling of particular organic compounds) when coupled with the study of pharmacology, tends to produce a nutrient-oriented, rather than a food-oriented, outlook and the use of a pharmacological approach to resolving a patient's nutritional problems. If the means of assessing a person's state of nutrition were more reliable and the guesswork were

removed, the imaginary state of nutritional deficiency that so many supplement-takers believe in could be shown to be non-existent.

The answer to the current flood of misinformation about dietary supplements must surely be that clearer thinking about nutrition needs to prevail in the community at large, and also in the health professions themselves.

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