

Book reviews

Lipids in Nutrition & Health: A Reappraisal, 1999, Michael I. Gurr. The Oily Press. pp. 200. £49.00, \$86.00 including airmail. ISBN 0-9531949-1-4.

This book reviews the scientific evidence in relation to the importance of lipids in nutrition and how they influence health. It addresses six main areas to highlight important recent advances in lipid nutrition: (1) influence of dietary lipids on blood lipid and lipoprotein concentrations; (2) dietary lipids and cardiovascular disease; (3) nutritional significance of lipid peroxidation; (4) importance of polyunsaturated fatty acids in nutrition; (5) dietary lipids and weight control; (6) lipids in food and raw materials. The author sought to 'examine critically the credentials of some popular beliefs about nutrition'. Indeed Gurr achieved this aim, the authors extensive knowledge in relation to the subject matter was immediately evident and his ability to present quite complex aspects of lipid metabolism in a manner that was easy to comprehend was impressive. Chapter 1 describes the basic metabolic effects of dietary fats on plasma lipoprotein metabolism. Gurr highlights the controversies upon which scepticism in relation to the role of dietary fats and blood lipid metabolism in CHD. These include important issues such as the differential hypercholesterolaemic effects of saturated fatty acids, the usefulness of predictive equations which estimate the changes in lipid levels as a result of dietary interventions, the concept of responders and non-responders and the real importance of *trans*-fatty acids within the context of a normal diet. Gurr also illustrates to the reader how confounding variables can affect study outcome, thereby facilitating the reader's ability to interpret and evaluate the study results of a nutrition study. In Chapter 2 it is proposed that the lipid hypothesis has been based on selective citation of scientific evidence which has led to the over-simplistic conceptualization that a multi-factorial disease can be explained by one risk factor, cholesterol. The author cautions against an all-embracing hypothesis, such as the lipid hypothesis or the French paradox, which simplify very complex conditions such as CHD. With respect to the causal role of the cholesterol hypothesis in relation to CHD, Gurr proposes that when the scientific evidence does not support a hypothesis, then it is only proper scientific practice to discard the hypothesis. Chapter 2 ends with a critical examination of current dietary guidelines, which he feels are based on insubstantial evidence. Understandably, Gurr firmly believes that if a central policy involves getting people to change their diets so that they may suffer less CHD then such advice should be based on good scientific evidence and it should be known that such advice will work.

The remaining chapters demonstrate that there are many other potential biological effects of fatty acids whereby fatty acids have the ability to modulate immune function, thrombosis, fibrinolysis, and antioxidant status. All of these

biological processes have important health implications not only with respect to CHD, but other causes of morbidity and mortality, such as cancer and inflammatory diseases. These chapters show the nutritional and biological effects of the different classes of fatty acids including *n*-6 and *n*-3 polyunsaturated fatty acids and monounsaturated fatty acids. The final chapter reviews novel and emerging issues in relation to lipid nutrition: these include the potential health effects of non-digestible fats, conjugated linoleic acid and plant sterols, thereby demonstrating that there are many new concepts and applications within the science of lipid nutrition which may be important in relation to health and disease.

Clearly Gurr has lost faith in 'expert' committees which publish recommendations. He truly believes that scientific objectivity has been warped by the demands of public health policy, whereby gross oversimplification of nutritional controversies has led to ignorance of some of the essential concepts which have evolved in lipid nutrition. When scientists cannot solve a nutritional dilemma, they are castigated for confusing the public somewhat and not providing a simple answer. He cannot understand why the complex nature of nutritional science is not appreciated and why the requirement for further investigation to solve the problems is not addressed. Above all, Gurr believes that it is important to know the full nature of the relationship between nutrition and disease and it is only with this knowledge that we should formulate a public health policy. The authors extreme frustration with the manner in which public health bodies promote the 'consensus view' in relation to nutritional issues was almost palpable. The promotion of simplistic nutrition messages, which were not based on complete scientific evidence and have subsequently had to be changed and updated, has been the ruination of nutrition. The mercurial nature of public nutrition has resulted in the lowering of public respect, interest and conviction in nutrition as a science. I finished the book feeling somewhat depressed at the prospect of how many more times are we going to have to go round in circles.

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Antioxidants in Human Health and Disease. T. K. Basu, C. N. Temple and M. M. Garg (editors). Oxford: CABI Publishing. 1999. Hardback, pp. 464. £60 (US \$110) ISBN 0 85199 334 6

The field of antioxidants in nutritional science continues to grow very rapidly. As well as antioxidants being ascribed roles in the prevention of an increasing number of diseases, much more is becoming known about their bioavailability and their mechanisms of action at cellular and genetic levels. The productivity of the field is intimidating, as emphasized by the fact that in the last 5 years more than

14 000 papers have been published on antioxidant-related topics. It is impossible for an individual to cope with all this information. In years past I would read papers on antioxidants with almost obsessive diligence. Now, however, there is not enough time even to scan the abstracts of papers and I rely on postdoctoral workers and postgraduate students to tell me about the interesting bits. This is why books such as *Antioxidants in Human Health and Disease* can be useful, as someone else has gone to the trouble of organizing the literature in a readily accessible form.

The book originates from presentations made at the 6th World Congress on Clinical Nutrition which was held in Banff, Canada, in July 1997. Inevitably, it will be slightly out of date as the most recent literature is not included. However, this volume has the advantage of being more than a conference proceedings, as some of the contributors appear to have been given the remit of reviewing concisely the state of their own particular specializations. In addition, there has been some editorial attempt to standardize the presentational format and to avoid duplication of information. Consequently the thirty-one chapters are separated into seven logical sections which deal with: (1) mechanisms of action, (2) food sources, (3) heart disease, (4) cancer, (5) other diseases e.g. cataracts, Parkinson's, Alzheimer's, diabetes, (6) markers of oxidative damage and (7) consumer issues.

With so many contributors, there is inevitably variation in the quality of chapters. However, relatively new areas such as antioxidants and the immune system and the evolution of antioxidants in relation to dietary restriction are clearly covered. In addition, a section on antioxidants in whole foods is very apposite. Much research on antioxidants tends to focus on individual compounds whereas antioxidants are

usually consumed within a complex food matrix where additional issues such as bioavailability become very important. In addition, synergistic effects of a mixture of antioxidants and other nutrients may be required to produce a beneficial health effect, whereas supplementation with a single antioxidant type may prove to be ineffective. The huge interest in the role of plant polyphenols in the diet is also catered for, although much important recent information on uptake, bioavailability and metabolism has not been covered due to the rapid pace of developments in this particular area. The section on consumer issues and how the work of the basic scientist is perceived by the media is important. It reminds us that provisional data offered to our peers for scientific scrutiny can become established and sensationalized fact in the eyes of the newspaper editor trying to increase circulation.

There have been several books published this year on aspects of free radicals and antioxidants and it is therefore difficult to definitively recommend this particular one over these others. It may be disappointing to those interested in the basic mechanisms and biochemical aspects of health and disease. However, I suspect that it would be frequently taken off the shelf of a departmental library by students and postdoctoral workers wanting to inform themselves generally before researching a particular topic more deeply. In addition, it was refreshing to see some 'new' names amongst the contributors as well as some perennial favourites. New blood is essential to keep any scientific area progressing dynamically and new perspectives on the fascinating subject of antioxidants are always welcome.

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