

BOOK REVIEWS

Diet and Heart Disease: A round table of factors

Edited by M. Ashwell

British Nutrition Foundation: London, 1993, pp. 3-63.

ISBN 0907667082. £13.50.

This attractive booklet has been prepared by the British Nutrition Foundation as a summary of current thoughts on diet and the high incidence of heart disease in the United Kingdom. It contains eight main chapters covering the topics of; epidemiology, pathology, risk factors, dietary factors, and their complex interactions with each other. The model of coronary heart disease described here is viewed as a three stage event, initiated by some kind of injury to coronary arteries. The second stage is a narrowing of an artery by fibrous plaque formation, followed by artery occlusion resulting from thrombus formation. The development of heart disease is clearly multifactorial in origin. However, much recent evidence suggests that modifications to our dietary life styles could significantly alter death rates in the United Kingdom. It is the purpose of this booklet to explain the possible role of dietary components in the development of heart disease using a simple "round table" model; and in this it succeeds.

The overall presentation is clear, concise and scientifically correct, set at a level which would be of interest to health professionals involved in health education and community health, as well as members of the lay public.

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Excited States and Free Radicals in Biology and Medicine

Contributions from flash photolysis and pulse radiolysis

Edited by R.V. Bensasson, E.J. Land and T.G. Truscott. pp 431.

I settled down to read this book on a comfortable 747 crossing the Atlantic. I expected from the title an educative but demanding task ahead, but was totally wrong and pleasantly surprised. "Excited States and Free Radicals in Biology and Medicine" sets out aspects of the physical chemistry behind this topic in an accessible fashion for biologists, biochemists, pharmacologists, medics and those working in related disciplines. The purpose of the text is to illustrate the relevance of research on excited states and free radicals *in vitro* to the reactions occurring in cells and applied to biological problems at the molecular level. In particular the authors have demonstrated how pulsed techniques, of which they are the masters, can be applied: (i) to produce excited states and free radicals in high concentrations and to examine very short-lived species; (ii) to study their structure and physical properties by spectroscopic methods and fast kinetic techniques in time spans ranging from subpicoseconds to seconds. The first six chapters take us through the generation

of excited states, their natures and reactivities; pulse radiolysis; activated forms of oxygen; photoactive components of nucleic acids and proteins and their relative constituents; carotenoids. The second half of the book covers clinical aspects of the field and painlessly guides us through melanoma, photodermatology and cancer-radiotherapy, chemotherapy and photodynamic therapy. These sections are readable and extremely informative. However in the authors' efforts to be true to the title, ". . . in Biology and Medicine", other areas approached are disappointingly brief in their coverage and yet other topics, e.g. cardiovascular disease, might well have not been mentioned. The book is written in a more "user friendly" style than most chemical texts of its type. Those working in the area of biological and pathological aspects of free radicals could take this opportunity of increasing their knowledge of the chemical background without tears by burying themselves in this readable text. Another useful feature is the extremely thorough reference list-1400 references with titles.

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Oxidative Stress, Cell Activation and Viral Infection

Edited by C. Pasquier, R.Y. Olivier, C. Auclair and L. Packer
Birkhäuser Verlag, Basel, 1994

This attractive-looking book reports the papers presented at an international conference held in Paris during March 1993. It contains 29 chapters, all well written, but arranged in no particular logical order. Topics covered include repair of oxidative damage to DNA bases in *E coli* (Boiteux), an hypothesis about oxidative damage in relation to antigen processing (Kelvin Davies), suggestions that TGF1 β can act through H₂O₂ (Nose *et al.*), the effect of redox agents on signal transduction (Stern), reactive oxygen species as mitogenic stimuli (Burdon), the effect of oxygen radicals on monocytes and lymphocytes (Afanasev and Korkina, Hannigan *et al.*), leukocyte adhesion to endothelial cells subjected to hypoxia/reperfusion (Modat *et al.*), effect of antioxidants on IL-6 secretion by lung fibroblasts (Raes *et al.*), H₂O₂ and the 32KDa stress protein (Winrow *et al.*), a general review of GSH/ascorbate interactions (Meister), the effects of lipoate and vitamin E on NF- κ B (Packer and Suzuki), the effect of vitamin E on cell proliferation (Azzi *et al.*), redox modulation of SP1 DNA binding ability (Rotilio *et al.*), a general account of regulation of cell growth by certain cytokines (Aggarwal and Totpal), LDL oxidation (Bonnetfont-Rousselot *et al.*), brain antioxidant defences (Merad-Boudia *et al.*), and the mechanism of protection by poly(A)-poly(U) against oxidative injury (Fay *et al.*).

Of particular interest are the chapters dealing with viral infections and the immune system. Peterhans wrote an interesting article on viral 'autotoxicity', Meyer *et al.* discussed redox control of gene expression, both Hunt *et al.* and Gerber and Dornand reviewed redox mechanisms in T cell activation, Legrand-Poels and Piette presented data on oxidative damage by singlet O₂ as a signal for HIV-1 expression (a theme continued by Israël *et al.* in their chapter describing the influence of redox status on HIV expression and immune functions), Dröge *et al.* reviewed evidence for abnormal redox regulation in HIV infection, Sergeant *et al.* discussed plasma

antioxidant status in HIV(+) subjects, and Baruchel *et al.* discussed the possible role of antioxidant therapy in treatment of HIV infection. Olivier *et al.* reviewed studies with N-acetylcysteine.

Although a few chapters seem irrelevant to the overall purpose of the book, and the index is probably too skimpy, overall this book is a very useful source of information, and I recommend it to all who are interested in this rapidly-growing area.

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