

Book reviews

Handbook of minerals as nutritional supplements

RA Di Silvestro
CRC Press, Boca Raton, USA, 2005, ISBN: 0849316529

The preface to this useful book rightly points out the huge extent to which the public is bombarded with advertisements for nutritional supplements, despite the lack of research support for many of the claims made. The book aims to summarize what information currently exists for several commonly used mineral supplements, including calcium, magnesium, potassium, zinc, iron, copper, selenium, manganese and chromium. Where information is available, each chapter considers how the nutrient is metabolized, its bioavailability from food, and what data support the use of supplements and for what indications.

The chapters are generally well-written, although I have a few quibbles. In the calcium chapter, undue emphasis is given to a small study by the author supported by Glanbia Ingredients Ltd. In describing coral calcium, the disadvantage of possible contamination with more-toxic metals is not discussed. The discussion of iron metabolism on p92 is confused, e.g. transferrin-bound iron does not generally originate from the liver and the role of hephaestin is not mentioned. Also confused is the discussion of

manganese neurotoxicity on p224. By contrast, I enjoyed the author's conclusion on p61 "despite mounds of study... very little can be said about the efficacy of magnesium supplements" and thought myself that the statement would still be generally true if "magnesium" were omitted. Other valuable parts include the discussion of the studies of the "anti-cold" effects of zinc lozenges (p155) and on the limitations of plasma zinc measurements (p133), although the author then uses such measurements on p135 in his own work. The discussion of "marginal copper deficiency" (p179) is good, as is that of the relation of selenium intake to cancer (p199).

Overall, I enjoyed this book and recommend it to nutritionists. I hope that there is a sequel dealing with the vitamins.

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Oxidative stress, inflammation and health

Edited by YJ Surh and L Packer
Taylor and Francis (CRC Press), May 2005
ISBN: 0824727339

Lester Packer and his colleagues always edit good books and this one is no exception, although the breadth of the title belies the fact that only a few relevant topics can be covered in a book this size. I particularly enjoyed the chapters on how thioredoxin modulates inflammation and tissue damage, how phytoestrogens might control gene expression, the relation of haem oxygenase to toxic effects of cigarette

smoking or endotoxin-treated macrophages, the link between thrombin and iNOS, the role of oxidative stress in the inflammation induced by hypercholesterolaemia (this chapter has a good account of effects on different types of blood vessel), the importance of NF- κ B and thioredoxin to the pathology of rheumatoid arthritis, the actions of carbon monoxide in liver, and the mechanisms of chronic obstructive pulmonary

disease. Equally interesting were the chapters on how inflammation is a fundamental mechanism of ageing which may be ameliorated by caloric restriction, and on the validity (or otherwise) of “biomarkers of oxidative stress/damage”, such as “total antioxidant capacity”.

Other topics covered include regulation of gene expression by plant polyphenols, their potential neuroprotective actions, the effects of cigarette smoke on NF- κ B activity, how 8-hydroxy-2'-deoxyguanosine is repaired from DNA, oxidative stress and cancer in relation to inflammation, the role of mitochondrial-derived and other ROS in neurodegeneration, and the antioxidant actions of selenium.

It is good to see a number of chapters from Korean scientists, who often have less international visibility in the field than they deserve.

Overall, a good book worth reading, although the index could have been more comprehensive.

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Phytopharmaceuticals in cancer chemoprevention

Bagchi D & Preuss HG
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This is a delightful book about diet, natural products and their contribution to the prevention of cancer. It begins sensibly with a section giving an overview of the epidemiology of cancer. The book progresses naturally into an in-depth look at the pathophysiology of the disease in its various forms. In this second section, the old “enemies”—asbestos, silica, tobacco, environmental radiation, and oestrogen—are given a fresh look, with illuminating insights into the molecular mechanisms of their carcinogenic action. The cancer biologist will benefit much from these chapters. Included in this section is an important chapter that discusses the pathogenesis behind the association between obesity (a metabolic disorder of epidemic proportions) and cancer. In the third section, twenty chapters are assigned to report on the variety of dietary factors and natural products that have a “claim” for a role in cancer chemoprevention. From a general overview of phytochemicals and their development as potential chemopreventive agents, this third section progresses to elaborations on the efficacy of the ubiquitous (almost) vitamins C, E, the carotenoids and polyphenols. The chapters on the well-known “triad” of tea, resveratrol and phytoestrogens provide evidence that will move one to decide to make the intake of these dietary

products a daily requirement. The inclusion of taxol with its inspirational success will surely rekindle the spark of hope for a blockbuster that is on the agenda of every drug development company. The chapter on chemopreventive effects of selected spice ingredients is particularly fascinating and has the potential to revolutionise the cooking habits of chefs. Indeed, each one of these chapters has been interestingly written, yet with extreme thoroughness and enough current scientific content to satisfy the researcher. Together, the chapters provide sufficient variety to keep the nutritionist and other healthcare professionals widely informed. The closing section has two chapters with clever titles in rhetoric on the anticancer potential of naturally occurring antioxidants.

At the end, I became convinced by the scientific basis for the cancer chemopreventive potential of phytopharmaceuticals. You too will want to stock up your dietary war chest against cancer with these phytopharmaceuticals.

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