

## Book reviews

Mary Kay Mitchell. *Nutrition Across the Life Span*, 2nd ed. Philadelphia: Elsevier Science 2003, £25.00 (paperback). pp. 590. ISBN 0-7216-9292-3

This 590-page book, printed in two-tone black and pale green does exactly what is says on the cover. It is a descriptive book of human nutritional needs across the whole lifespan. This book contains fifteen chapters organised into five sections as set out below. I have listed the contents to illustrate the breadth of topics covered by the book and to give a flavour of how the book deals with such a large nutrition area as the lifespan.

### 1. *Foundations*

Introduction to Nutrition and the Life Span  
Nutrition Screening and Assessment  
Promoting Dietary Change

### 2. *Reproduction*

Pregnancy  
High Risk Pregnancy  
Lactation and Breast Feeding

### 3. *Growth and Development*

Nutrition During Infancy  
The High-Risk Infant  
Nutrition during Growth: Pre school through to Pre adolescence  
Nutrition for Children with Special Needs  
Nutrition During Adolescence

### 4. *The Adult Years*

Adulthood  
Aging and Older Adults

### 5. *Special Concerns Across the Life Span*

Eating Dilemmas: Dietary Restraint, Bingeing, Purging, Excessive Consumption, and Excessive Exercise  
Nutrition, Physical Activity, and Performance

This book is logically set out with each chapter following the same layout. Each chapter begins with an outline of topics to be discussed and ends with a list of concepts to remember. Within the chapters, each major section is preceded by a list of review questions. The outline and the questions give an idea of the material to be covered in the chapter and, together with concepts to remember, they provide a useful review tool. Most chapters are introduced with a case study that illustrates the importance of nutrition at this stage of human life; this provides a good perspective for the reader. In each chapter, key themes, essential to understanding the content, appear in boldface. This book is therefore designed very much with the 'student' in mind. It would also make a useful general book to dip into for those practitioners who work with

a wide age range of people. However if you are a specialist this book does not go deep enough into each specific age group of the lifespan. I particularly like the questions asked in each chapter under the heading 'research update'; these are the typical undergraduate questions. An example from p. 178 is: 'Are breast fed babies smarter?' The answer critically appraises some current research, six peer-reviewed references from international journals are cited and a practical answer is given.

New content for this 2nd edition includes more on the cultural, social and behavioural aspects of human nutrition. I think this is a useful addition to the bookshelf for students beginning to understand the complexities of food choice and nutrition.

There are limitations however. The North American approach means that every chapter contains American dietary reference intakes and not dietary reference values. Also, for example, blood cholesterol levels are expressed in mg/dl as opposed to mmol/l and the food pyramid is used to illustrate a food-based nutritional teaching aid. This can sometimes mislead the UK undergraduate student and is a problem common to many nutrition texts that are currently available. At the end of every chapter there is a list of useful contact addresses for further resources, but these are also American. However, peer-reviewed journal references are of an international nature.

In conclusion this is a North American nutrition textbook with a reader-friendly style covering the whole human lifespan, a good undergraduate student book but not for the specialist.

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Fred Brouns. *Essentials of Sports Nutrition*, 2nd ed. Chichester, West Sussex: John Wiley 2002, £24.95 (paperback). pp. 242. ISBN 0-471-49765-7

This very readable book is an updated version of the first edition that was first published 10 years ago and essentially follows the same format with much similar content. Dr Brouns is both a scientist and practitioner, and hence

the book attempts to address the two areas. The science is sound but the practical guidelines are rather weak in terms of actual foods to ingest. Ten of the thirteen chapters end with 'key points', which are effectively practical considerations arising from the research findings presented in the chapter. This is novel and welcome. Although the book is supposed to be a comprehensive coverage of sports nutrition, the achievement of this is questionable. Certainly there is much breadth of topics but there is a lack of depth, and some topics such as glycaemic index, N balance, and some key ergogenic aids are dealt with in a cursory manner. However, for its limited number of pages, the book is comprehensive and certainly there is some updating from the previous edition.

The contents are what would generally be expected in a book covering sports nutrition, i.e. there are four parts or thematic sections subdivided into thirteen chapters. The four major themes consist of 'nutritional aspects of macronutrients in sport', 'aspects of dehydration and rehydration', 'nutritional aspects of micronutrients in sport', and 'ergogenic aids and metabolism'. The order of the 'parts' (I shall use the term section) and the chapters is generally conventional, although I would have placed the final chapter entitled 'a brief outline of metabolism' at the beginning. One rather annoying aspect is that the references are numbered in the text and appear in alphabetical order in the reference section up to reference 210 after which the alphabetical order is discontinued and becomes a lottery. Obviously a problem!

Following an introductory chapter that sets the scene for that which is to follow, the first section relates to macronutrients and sport, and so the chapters are concerned with the role and importance of carbohydrates, fats and protein for sports performance. Each chapter is relatively brief but does provide some useful background and relevant research findings. My view is that the chapters provide the launch pad for readers to progress to more detailed relevant review papers or actual journal articles and thereby achieve both greater depth and breadth. Topics such as the glycaemic index, glycogen resynthesis, fat loading, and N balance need to be accessed elsewhere for more detail.

The one chapter that makes up the section on 'aspects of dehydration and rehydration' appears rather unchanged from the previous edition, although many of the key considerations are presented here. These include fluid loss in sport, fluid and electrolyte intake, and sports drinks. The reader is presented with some good review references to obtain more detail and wider coverage, but I was rather disappointed in the comparative lack of experimental evidence and advice concerning rehydration after exercise.

The four chapters making up the section on micronutrients are succinct and contain the usual essential information. These are rather 'bread and butter' topics, clearly necessary components for a better understanding of sports nutrition. An interesting feature in this section, and one that is novel from the first edition, is that of a chapter on antioxidants and free radicals. A clear description of what free radicals are and how they are formed is followed by a subsection on the importance of vitamins A, C, E, and

$\beta$ -carotene as antioxidants. However, the role of Se as an antioxidant is ignored.

The final section contains four chapters concerning ergogenic aids, eating disorders, practical issues, and an overview of metabolism. The chapter on ergogenic aids is fairly comprehensive in terms of the number of nutritional substances explored, but rather imbalanced. A considerable amount of the chapter explores the evidence relating to caffeine whilst subsections on creatine and on alkaline salts are sketchy. I find this strange since the evidence for the effectiveness of creatine supplementation and bicarbonate loading is considerable. Some of the more esoteric substances such as bee pollen, ubiquinone, and ribose could have been left out to allow for greater consideration of creatine, bicarbonate, L-carnitine, branched-chain amino acids, and glutamine.

The chapter on eating disorders in athletes consists of a mere three pages. I have to question whether it is worthwhile flagging up a topic that is dealt with in such a cursory manner. My own view is that it is better not to present a topic if significant and meaningful material is not to be presented.

The penultimate chapter 'from theory to practice' follows a question and answer style observed in some publications supported by various sports drinks companies. My view is that since the major concerns were with carbohydrates and fluids, these points could more meaningfully have been undertaken in the earlier chapters on carbohydrates, and also on dehydration and rehydration. Another variance in this chapter is that no references are presented to support the scientific studies mentioned. This is a concern, since many useful studies were presented but without reference. Furthermore in the pre-competition guidelines no mention is made of the glycaemic index, and indeed the old chestnut of rebound hypoglycaemia during exercise resulting from pre-exercise carbohydrate ingestion is highlighted. Of course caution should be raised about the possibility of rebound hypoglycaemia, but this does not have to happen if carbohydrates are taken during exercise or that the amount of carbohydrate ingested before exercise is not too high.

Overall there is much merit in this publication, and the points I have raised are relatively minor. I believe that students interested in furthering their knowledge in sports nutrition will find the text of benefit, particularly in pointing them to further reading. In relation to nutrition for the exercising population there is little of benefit or practical guidelines. Indeed there is limited actual practical guidance in terms of foods and drinks to consume, but I suppose that would require a more lengthy text. This book is concise and contains much relevant and interesting material, and one that I would recommend students to digest.

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*Metal Contamination of Food: Its Significance for Food Quality and Human Health.* Conor Reilly. 3rd ed. 2002. Oxford: Blackwell Science. pp. 266 + xviii. £79.50. ISBN 0 632 059273.

The past 25 years have seen a remarkable increase in public concern about the contamination of food, probably fuelled by the significant advances in our capability to detect such contamination. Nowhere is this more notable than in the area of metal contamination. Since the publication of the 1st edition of this book in 1980, measurement capability for the determination of metals in food has improved by approximately three orders of magnitude. Indeed, the concept of contamination would appear to be a little dated, as most metals can now be determined at naturally occurring levels. Yet there is an undoubted need for such measurements to assure the public of the safety of food and to understand the significance of trace metals to human health and nutrition. Sensibly, the author has added a new subtitle to acknowledge this.

The advent of new routine analytical methodologies, particularly inductively coupled plasma–atomic emission spectrometry and inductively coupled plasma–MS, which are both multi-element techniques, has necessitated extensive rewriting of the text compared with previous editions. This is essentially a new book with a new publisher, Blackwell Science, replacing Elsevier Science. With the exception of the introduction, which by its very nature tends to look at the past, the book is up-to-date and clearly shows the extent of the rewriting undertaken.

The book is organised in two parts. The first concerns general aspects and the second part considers the individual metals in turn. The author is properly cautious in classifying the metals we consume in our food as essential or non-essential, toxic or non-toxic, for it is often difficult to distinguish these categories and the classification depends to some extent on the amounts consumed. This is not a treatise about food safety and nutrition and the author moves speedily into a discussion of analytical techniques. The chapter outlining these techniques is sound, if not particularly detailed. Pleasingly, the importance of sample preparation is stressed and references to original papers abound for those wishing to locate more detail. Perhaps the author might have given more indicators as to the limitations of some techniques. The important and growing field of speciation, i.e. the determination of the different chemical forms of the metals in question, which determines, of course, issues such as toxicity and bioavailability, is introduced. The importance of analytical quality control is also mentioned, but given the significance

of this to regulations, health and safety, I would have wished to see more than one page on this important aspect.

Chapter 4 describes how metals get into foods and is an excellent review of this area. The following chapter deals with legal aspects. The discussion of the historical aspects is fascinating and a reminder that a relatively brief text covering such a diversity of areas could easily be expanded to be a series of books.

Reilly manages to sustain the readability of the book when dealing with the individual metals by linking the metals discussed in logical group, e.g. Pb, Hg and Cd. In each case the history, properties, sources, effects, occurrence and analysis are considered. It is a real achievement to get so much detail into a book of less than 300 pages. This necessarily means if the text is to be comprehensive there are some restrictions on detail: this can be particularly frustrating as regards the analytical details. Mention is made of a number of metals increasingly found in food but not usually covered in general texts.

It is fascinating to note that, even with the inclusion of formerly 'exotic' metals such as Zr, less than half the metals and/or metalloids known to man are covered. One suspects a 4th edition would have to extend the list of metals considered still further.

This book is clearly targeted at a general audience in the food industry, including those working in food processing, regulation and general analytical laboratories. Libraries will be anxious to have this comprehensive text on their shelves if only for the authoritative overview that Reilly demonstrates in his subject area. As might be expected, Professor Reilly is particularly strong in his consideration of Se and implications for human health. This reviewer would have welcomed more discussion and detail about metal speciation. The book suggests that the study of speciation is still in its infancy, whereas one could argue that regulators need to take speciation more seriously; texts such as this could aid those not in the forefront of research to appreciate the importance of speciation.

The text is well presented and lucid throughout. It is a worthy successor to the previous editions.

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