

Book Review

New S, Bonjour J-P, eds. *Nutritional Aspects of Bone Health*. Cambridge, UK: The Royal Society of Chemistry, 2003. £49.95, hardcover, 755 pp. ISBN 0-85 404-585-6.

This book examines different aspects of nutrition and bone health. The volume includes 32 chapters written by European and international authors who are actively involved in research in this field.

The book is divided in six sections. The first section consists of six chapters giving background information on osteoporosis, the epidemiology of osteoporosis and non-nutritional factors related to bone fragility. One chapter is dedicated to the role of genetics in osteoporosis. In addition, rickets, osteomalacia and other metabolic bone diseases and the influence of nutrition are covered. The last chapter deals with assessment of dietary intake and nutritional status.

The second section, comprising three chapters, addresses the role of calcium and vitamin D in bone health, starting with an overview on nutritional aspects of bone growth, followed by the role of calcium in maximising peak bone mass. Furthermore, the role of calcium in reduction of postmenopausal bone loss and fracture prevention is covered. In the chapter on intestinal calcium absorption, methods for studying calcium absorption and factors affecting calcium absorption are discussed. The important role of vitamin D in fracture prevention is addressed in the last chapter in this section.

Four chapters are included in the third section. Here are presented the effect of low and high protein intake, and of phosphorus and sodium on the skeleton. Furthermore, the role of the skeleton in acid–base homeostasis is discussed, focusing on vegetable and fruit consumption and on mineral waters.

There are seven chapters in the fourth section. They deal with vitamin K, magnesium, trace elements, vitamin A, food groups, soy isoflavones, alcohol and caffeine and bone health.

The fifth section is the largest, with nine chapters. This section starts with the twin model approach, followed by nutrient–gene interactions. Two chapters are dedicated Asian and Middle East populations. Thereafter the interaction among physical health, nutrition and bone health is discussed. The last chapters have a more clinical approach: interaction of nutritional factors with medication, weight reduction and bone, eating disorders and bone health, and the effect pregnancy and lactation on the skeleton.

The sixth section with three chapters addresses bone health from a public health point of view. The first chapter deals with an important question: can nutrition alter the population burden of fractures? The authors conclude there are many areas of ignorance regarding the effects of nutrients on skeletal growth and ageing. However, the most opportune period in life for interventions seems to be during growth, but the optimal time period has not been established. In addition, investigation of the efficacy of calcium and vitamin D in high-risk groups has demonstrated a role in fracture prevention in such individuals. We do not know the effect in low-risk individuals. The next chapter discusses the cost-effectiveness of nutritional supplements. However, the only supplements that have been studied are calcium and vitamin D. The last chapter is dedicated to nutritional strategies for prevention and treatment of osteoporosis. The author presents comprehensive strategies for both individuals as well as professional groups: health professionals, industry and agriculture as well as policy-makers. The author concludes that when asked the question ‘Who needs nutritional osteoporosis prevention?’, we should remember that ‘we all do, throughout life, because stronger bones are harder to break than weak ones’.

The book provides an overview on the different aspects of nutrition and bone health. Each chapter forms a complete entity. All chapters are well referenced, but not completely covering all relevant issues. Why are only dietary assessment methods presented in the chapter on nutritional assessment, although biochemical methods are of great importance? In addition, the role of vitamin D in children, adolescents and adults is not discussed at all, although there are studies on this subject. The grouping of the chapters is not quite logical among the sections. Why is magnesium considered in section 4, phosphate in section 3 and calcium in section 2, although all play a role in mineral metabolism? Why is the measurement methodology for bone mineral density presented on page 568 in the chapter on treatment of osteoporosis and interaction of medications with nutrition and not earlier, even though it is one of the main outcomes in the study of bone health? The same applies for the markers of bone turnover. Why is the twin model introduced as one of the chapters in section 5, although this description of methodology and some applications have been referenced in earlier chapters?

As the chapters have been written by different authors, the writing styles and the approaches to the subjects differ,

which is typical for edited books. In addition, the reader has to have knowledge of bone physiology and the methodology used in bone research.

All in all, the book provides a comprehensive and impressive review of an important aspect of bone health. Lifestyle factors such as nutrition are very important in the prevention of many chronic diseases, so also in the prevention of osteoporosis. Although there are many unanswered questions yet waiting for an answer, we know much nowadays about the role of nutritional factors in bone health. The book helps us to understand this.

The book is aimed at undergraduate and postgraduate students, but would be a valuable source of information for all working in the bone field and for health professionals.

Christel Lamberg-Allardt

Department of Applied Chemistry and Microbiology
PO Box 66, FIN-00 014 University of Helsinki
Finland

Email: christel.lamberg-allardt@helsinki.fi

DOI: 10.1079/PHN2004713