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**Nutrition and Health: Joseph I. Boullata and Vincent
T. Armenti (eds) , 2nd ed.**

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Book Review
Handbook of Drug – Nutrient Interactions – Second Edition
Edited by
Joseph I. Boullata
Vincent T. Armenti
Humana Press: Parsippany, NJ, 2009. Price:
821 pp, indexed; illustrated

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2 The wide-spread use of “functional food”, “natural products” and “herbal medicine” is only a
3 reminder that the border between drugs and nutrients is not clear-cut, but arbitrary and vague. While
4 there is a growing awareness of potent interactions between some herbal medicines and drugs, the
5 interaction between “normal” nutrients and drugs is largely unexplored. Still, drugs and nutrients
6 share a lot of common features as they both may induce physiological effects within a proscribed
7 concentration range, both may interact, and both follow similar pharmacokinetic and
8 pharmacodynamic principles and mechanisms. It is surprising how little attention has been paid to
9 the considerable risk of drug-nutrient interactions in medical education and standard textbooks of
10 pharmacology.
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14 The “*Handbook of Drug – Nutrient Interactions – Second Edition*”¹, edited by Joseph I.
15 Boullata and Vincet T. Armenti is a praiseworthy attempt to deal with this shortcoming. The book is
16 divided into six parts, the first part containing introductory chapters on general aspects of drug
17 nutrient interactions. The second part deals with the influence of general nutritional status (under-
18 and malnutrition, or obesity) on drug effects. The third part is a discourse on the influence of
19 nutrients and supplements on drug disposition and effects. The fourth part discusses the opposite
20 effects, that is the effects of drugs on nutritional status (weight gain/loss, taste, vitamins, bone-
21 mineral content). The fifth part investigates drug-nutrients interactions in different stages of life
22 such as infancy/childhood, pregnancy and breastfeeding, and in the elderly. The last part deals with
23 aspects of drug-nutrient interactions under certain conditions such as immune deficits, cancer
24 disease, transplantation and chronic infections.
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28 The handbook comprises of more than 800 pages divided into 26 chapters. Each chapter
29 may function as a “standalone”, but also contains cross-references to other chapters in the book.
30 The chapters are rather short and concise, easy-to-read, comprehensive, up-to-date and well-
31 referenced (most chapters contain more than 200 references). The chapter structure is stringent.
32 Most chapters start with a list of objectives and finish with “take home messages”, “conclusions”, a
33 “summary” or “discussion points”. This allows the reader to get a fast overview over the content of
34 what the chapter deals with. In addition, the reader finds numerous informative tables (with
35 references!), useful “black boxes” and a few comprehensive figures in the chapters.
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39 This handbook is practical and highly clinically relevant, giving concrete advice how to
40 handle clinical situations and supplying equations for necessary dose adjustments in case of
41 interactions. At the same time, the book delivers the theoretical background and scientific evidence
42 making it useful for scientists, too. I would like to draw the readers' attention to chapter 4 on “Drug-
43 Metabolizing Enzymes”. This general chapter gives an outstandingly well-written and
44 comprehensive overview over the cytochrome P450 system and drugs/nutrients metabolised
45 through it. This chapter is well-referenced with more than 300 references, and contains a lot of
46 tables with references on every single drug and nutrient that is mentioned. Other chapters that
47 deserve special attention are chapter 10 on “Grapefruit and Other Fruit Juices. Interactions with
48 Medicines», chapter 12 «Interactions of Natural Products with Medication and Nutrients» dealing
49 among other products with St. John's Wort, Ginseng and glucosamine. Furthermore, own chapters
50 have been devoted to «Drug-Nutrient Interactions Involving Folate» (which is especially important
51 in countries with food fortification programmes that include folic acid) and «Drug-Nutrient
52 Interaction Considerations in Pregnancy and Lactation».
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57 The scope of potential drug-nutrient interactions is huge. Some interactions are weak and
58 may not be important in most instances, while others are strong and highly clinically relevant; and
59 still may have been overlooked for long times. In Western countries where obesity has become
60 endemic, where “functional food” is getting more and more popular and polypharmacy is

1 Joseph I. Boullata and Vincent T. Armenti, *Handbook of Drug-Nutrient Interactions*, 2nd ed. (Humana Press, 2009).

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2 increasingly widespread, especially among the elderly, it is important to increase the awareness and
3 knowledge among all health-care professionals that drug-nutrient interactions actually exist and
4 have to be taken into account in clinical decision making. To teach healthcare professionals how to
5 predict and handle these interactions is an important challenge for the future. The present handbook
6 is surely to be considered a benchmark that allows the readers to gain a fast, authoritative overview
7 over this complex system of interactions between nutritional status, physiological and patho-
8 physiological parameters, such as lifestyle, disease status, gender, route of administration, and food.
9 The second edition of the “*Handbook of Drug-Nutrient Interactions*” is truly helpful for clinicians,
10 clinical pharmacologists and other healthcare providers as well as scientists to orientate in this
11 “jungle of potential interactions” and should not be missing in any professional library.
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For Peer Review