Handbook of Oxidants and Antioxidants in Exercise

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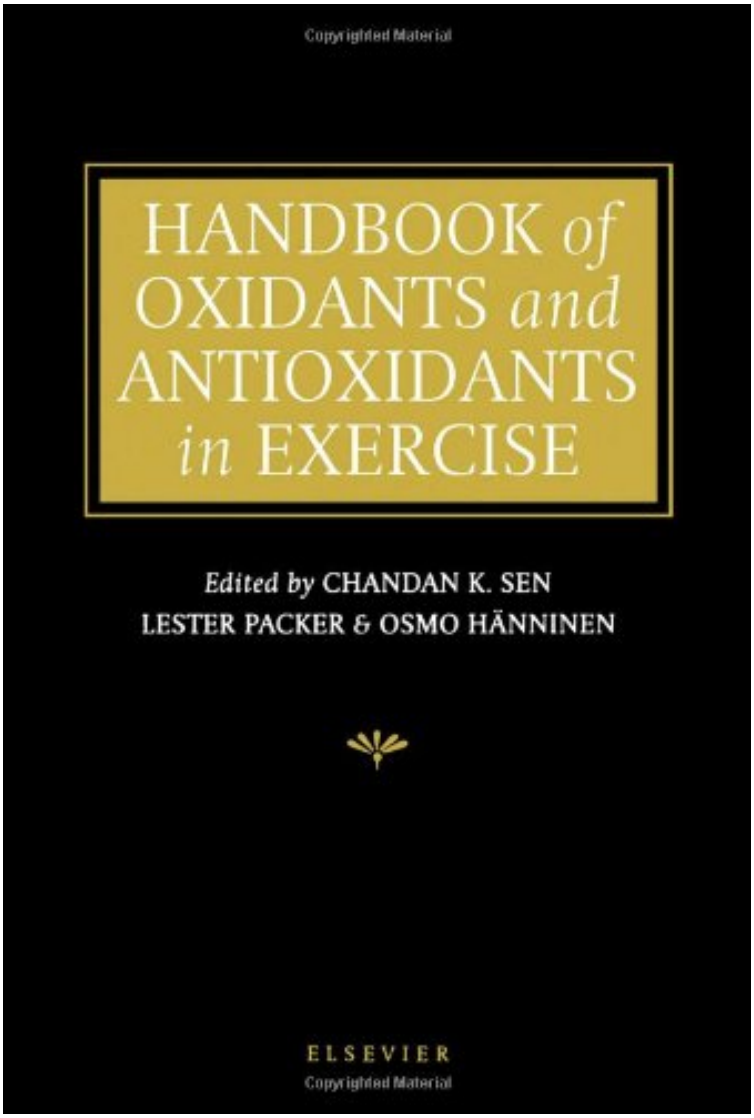

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From Elsevier Science : Handbook of Oxidants and Antioxidants in Exercise before purchasing it in order to gage whether or not it would be worth my time, and all praised Handbook of Oxidants and Antioxidants in Exercise:

5 of 5 people found the following review helpful. Review in Biogerontology Volume 2.1By A CustomerHow do you review a book which is 1207 pages thick and contains 40 articles written by more than 90 authors? I decided to start with what I knew and check out whether it matched with what was written in this overwhelming piece of work. Therefore, first of all I carefully read through Chapters 27 to 30 on various aspects of aging, and I became fully convinced that here was a book that I was going to keep and use for many years to come. The book is divided into 12

parts comprising a whole range of subject areas within the context of free radicals, oxidants and antioxidants. Part I provides an excellent and comprehensive background on the free radical chemistry in a 53-page long chapter by K.D. Asmus and M. Bonifaci. This is followed by Parts II and III containing a series of articles on reactive species and the mechanisms and manifestations of oxidative stress. Of these, Chapter 2 by M.J. Jackson on exercise and oxygen radical production by muscle, and Chapter 4 by O. Tirosh and A.Z. Reznick on the chemical bases and biological relevance of protein oxidation are especially useful for those involved in aging research. Similarly the four chapters on oxidants and aging by K.B. Beckman and B.N. Ames, on calorie restriction, exercise and aging by R.J.M. Carter, on oxidative stress and the pathogenesis of sarcopenia by M.E. Lopez et al., and on molecular mechanisms of oxidative stress in aging by M. Pollack and C. Leeuwenburg are extremely informative and useful for biogerontologists. Furthermore, a critical discussion of the hormesis of exercise-induced free radicals in terms of having anti-aging and life prolonging effects is indicative of the up-to-date nature of the book. In addition to the discussion of oxidants and anti-oxidants in aging, there are 10 articles on various disease processes, including cancer, inflammation, atherosclerosis, peripheral arterial disease claudication, rheumatoid arthritis, diabetes and obstructive pulmonary diseases. I must admit that not all these chapters covering a whole range of diseases were easily understandable to me because of my own limitations. Therefore, although I only ran through them quickly, I am sure that for those who are involved in such kinds of studies, these articles will be very useful. Other chapters on antioxidant defenses and their relationship with exercise training, nutrition and environmental factors are also equally well written and provide a comprehensive overview of these areas. There are two articles by D. Han et al. and T. Hamaoka et al., which describe the analytical methods on oxidative stress indices, and noninvasive measures of muscle metabolism, respectively. These chapters provide an in-depth discussion about the general difficulties in oxidative stress determination, advantages and disadvantages of various methods of detection of reactive oxygen species, and the measurement of antioxidants as markers of oxidative stress. For those of us using or planning to use such methods in biogerontology research, it will be very useful to read these articles carefully and be aware of the problems inherent to them. Finally, even while missing out commenting in detail on several other equally useful and informative articles on the cellular and molecular mechanisms of redox regulation in various organs, I would like to highly recommend this impressive handbook to one and all interested in the basic and applied biochemistry of oxidants and antioxidants in health, disease and aging.Suresh I.S. Rattan Editor-in-Chief Biogerontology

Interest in the science of exercise dates back to the time of ancient Greece. Today exercise is viewed not only as a leisurely activity but also as an effective preventive and therapeutic tool in medicine. Further biomedical studies in exercise physiology and biochemistry reports that strenuous physical exercise might cause oxidative lipid damage in various tissues. The generation of reactive oxygen species is elevated to a level that overwhelms the tissue antioxidant defense systems resulting in oxidative stress.The Handbook of Oxidants and Antioxidants in Exercise examines the different aspects of exercise-induced oxidative stress, its management, and how reactive oxygen may affect the functional capacity of various vital organs and tissues. It includes key related issues such as analytical methods, environmental factors, nutrition, aging, organ function and several pathophysiological processes.This timely publication will be of relevance to those in biomedical science and was designed to be readily understood by the general scientific audience.

R.J. Shephard...Most chapters contain detailed summary tables, and conclude with helpful lists of abbreviations. This will be a volume that many who are involved in exercise and applied physiology would like to own.Canadian Journal of Applied PhysiologyB. Halliwell...this is an excellent book that I recommend highly. Although some chapters do not mention exercise, this does not detract from their quality.Free Radical Biology Medicine