BOOK REVIEWS

John M. Porter, MD, Book Review Section Editor

Cardiovascular response to exercise

Gerald Fletcher, Mount Kisco, N.Y., 1994, Futura, 446 pages, $75.

The book, *Cardiovascular Response to Exercise,* provides both theoretical and practical discussions of the importance of exercise as a means for evaluating and treating patients. As the editor intends, the focus of the book is on the cardiovascular responses to exercise, with the scope of the book encompassing basic research as well as clinical trials. This book benefits strongly from an in-depth approach to its subject matter.

Six major sections comprise the book. The first two sections focus on basic studies, including the metabolic and ventricular responses of the heart to exercise in experimental animals and human beings. In addition, biochemical and physiologic responses of the heart to factors related to long-term exercise are discussed. These two sections serve as a strong support and reference for the later, more clinically oriented chapters.

In the third section of the book, systemic responses to acute exercise and exercise training are discussed. This section contains a particularly outstanding contribution entitled, Effects of High Altitude and Training on Oxygen Transport and Exercise Performance, written by Drs. Robert Janson, Robert Grover, and Arthur De Graff. This chapter discusses the influences of high altitude on exercise training, an area of great importance in that it explores the physiologic stresses imposed when both exercise and hypoxia are present. The fourth major section of the book contains chapters describing the role of exercise as a trigger of the onset of acute cardiovascular disease. This section is important and unusual in discussing the risks incurred by those who exercise, as well as putting the risks in perspective.

The fifth section is particularly excellent and thought-provoking as a whole, with thorough discussions of the potential for modifying the risks for cardiovascular disease through exercise training. Included are chapters about the reduction in cardiovascular mortality rates in the presence of increased physical fitness, the relationship between exercise and lipids, and the genetics of the exercise training response. These chapters sum up the interaction of exercise training with the modifiable (i.e., lipids) and nonmodifiable (i.e., genetics) risk factors for cardiovascular disease.

The final section is about clinical applications of exercise in specific circumstances. This section is a bit less focused than the others in that it contains chapters about exercise in patients both with and without disease, as well as about different techniques that can be used to assess various parameters during acute exercise. For instance, the role of exercise training for patients who have severe left ventricular dysfunction is discussed in this section, followed by a chapter on the use of magnetic resonance methods during acute exercise. However, the chapters individually are well-written and useful. One point of omission is that in spite of the comprehensive discussion of the cardiovascular response to exercise, no discussion of exercise training for patients with peripheral arterial disease is included. This may reflect a desire of the editor to focus on central rather than peripheral systems.

To summarize, the chapters are well-written and current, the tables and figures are clear, and the references are up-to-date. Chapters are all well summarized. In addition, the physical presentation of this book is good. Thus, *Cardiovascular Response to Exercise* should be a valuable reference, not only for cardiologists and internists, but also for the surgeon who may deal with exercise as a method for testing, training, and rehabilitating patients.

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Management of diabetic foot problems, 2nd edition

G. P. Kozak, D. R. Campbell, R. G. Frykberg, G. M. Habershaw, Philadelphia, 1995, W.B. Saunders, 308 pages, $70.

This is an easily readable, well-written review of the majority of problems encountered in diabetic patients who have simple and complicated foot disorders. The editors, all of whom are associated with the New England Deaconess Hospital and the Joslin Diabetic Center, have chosen contributors to reflect the philosophies of clinicians developed over the years at an institution dedicated to the care of patients with diabetes. The result is a clearly defined, well-conceived guideline to the treatment of foot problems in this population of patients, which presently constitutes 5% of the population of the United States.

Each chapter is succinct and more detailed information is available from other sources, especially with regard to vascular procedures. Surgeons should be particularly interested in the chapters that describe the epidemiologic factors, biomechanical considerations, podiatric problems, Charcot foot, radiology of the diabetic foot, and physical rehabilitation of the diabetic foot. In addition, the chapters on preoperative evaluation and perioperative management of the diabetic patient provide easily understandable and clear guidelines.

A particularly noteworthy chapter authored by three podiatrists, one of whom is a coeditor of this volume, stresses reconstructive foot surgery as a means of preventing many of the complications of diabetes mellitus in both the sensate and insensate foot. Operative procedures are described in detail and the effects of operation on gait and conventional shoeing reviewed.

A clear, well-photographed group of 64 color plates are included, 48 of which depict clinical findings in the neuropathic, ischemic, and infected diabetic foot. These

plates are well worth reviewing, particularly for surgical house staff and medical students.

This second edition of *Management of Diabetic Foot Problems* accomplishes the desired results of the editors to produce a book which provides comprehensive and practical clinical coverage and stresses the team approach in diagnosis and treatment. The addition of several new chapters and revisions of others have been instrumental in improving the scope of this work. This book will be useful for vascular surgeons and a valuable reference for primary care physicians and surgical house staff.

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Stroke therapy

Marc Fisher, Boston, 1995, Butterworth-Heinemann, 490 pages, $90.

This is an excellent review of the current knowledge base pertaining to the management of patients with stroke. The book is comprehensive, extensively referenced, well-edited, and attractively packaged. The illustrations, a number in color, are of high quality. The 19 chapters are well-organized and arranged. There are very few typographic errors. A memorable one though, is a reference to a trial of hemodilusion therapy and might even have been a plant (page 334).

Stroke therapy, however, is almost a misnomer. It is apparent in reading this nearly 500 page review, that there is in fact, unfortunately, very little direct treatment at present for a irreversibly ischemic or even dying brain. The book does discuss the many initiatives that may have promise, such as acute thrombolysis, cytoprotection, enhancing collateral flow in the ischemic penumbra, aggressive supportive care, and rehabilitation. The book is really a broader review of the causes and pathophysiologic mechanism of stroke and its prevention. It covers in detail diagnostic techniques and includes chapters on intracranial and subarachnoid hemorrhage.

There is some overlap between chapters at times with a different viewpoint. There are some issues presented, rather dogmatically, with which many readers would disagree, for example, that duplex scanning will not replace standard carotid angiography before carotid surgery (page 250), or that some have recommended angiography be ordered only by certain specialists such as vascular or cardiac surgeons after neurologic consultation (page 224). The book suffers somewhat from a lack of surgical perspective and input. The chapter on surgical therapy to prevent stroke is written by a neurologist, though it is reasonably well-balanced. In another chapter however, sadly, the legendary Owen Wangensteen is referred to as Wagensteen three times in a paragraph devoted to his gastric cooling experiments. I will allow the curious to discover how this relates to a book on stroke (page 149). There is an overly detailed and quite peripheral chapter dedicated to a general description of clinical trials which seems out of place, but is a good review. Although this is a single-topic text, it is nonetheless a major area of medicine, and is covered comprehensively. It is quite current as texts go, and contains a remarkable amount of information, presented by unquestioned authorities. Vascular surgeons will gain much from reading this book, as will neurologists, neurosurgeons, and internists. The references alone will make it a valuable resource, and many chapters have 150 to 200 or more. At its price, it is a relative bargain.

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Cell physiology: Source book

Nicholas Sperlakis, San Diego, 1995, Academic Press, 738 pages, $99.

The volume *Cell Physiology: Source Book,* edited by Nicholas Sperlakis, is meant to focus on physiologic and biophysical principles as they apply to the cell, not the whole organism or even organ systems. The intended audience is primarily advanced undergraduate and graduate students. The editor perceives a void not covered by currently available medical physiology or cell biology texts, which "generally treat cell physiology in a superficial and incomplete manner." The book focuses on the explanation of cellular processes through classic biophysical and chemical terms. I think the book generally fulfills its stated objective, although perhaps with at least one significant omission.

The book is organized into seven sections covering basic biophysical principles, transport physiology, membrane excitability, ion channels, synaptic transmission, contractile systems, and bioluminescence/photosynthesis. As can be surmised from its topical organization, the book is heavily oriented around membrane physiology. A major weakness of the book is its failure to cover the biophysical aspects of intranuclear processes, such as DNA folding and nucleic acid/protein interactions that occur during DNA replication or transcription. I thought the treatment of protein structure and function was quite good, especially the emphasis on how the primary amino acid sequence predicted secondary and tertiary conformation and function. I wish a similar treatment of nucleic acid structure and function had been included.

Each contributor (there are 49) was asked to begin each chapter with a fairly elementary treatment of the topic and progress toward more sophisticated and complicated concepts at the end. This pattern was followed somewhat inconsistently, in my opinion. Furthermore, some chapters assumed familiarity with concepts covered in other chapters—a problem that detracts from the book's usefulness as a reference source. Those of us who are more biologically-minded are not immediately conversant with the definitions and meanings of the frequently used physical constants and terms. A table in the appendix listing these terms and their definitions would have been helpful.

1975 May;1(1):36-9. The management of diabetic foot problems. Marcove RC. PMIDÂ Diabetic Neuropathies/complications. Foot Diseases/complications. Foot Diseases/prevention & control. Foot Diseases/surgery*. Gangrene/surgery. Humans. Nevertheless, a hospital admission for a diabetes-related foot problem provides a unique "teachable moment" because patients may be motivated to prevent further problems. Even though staff nurses have competing demands and limited time for education, it is essential that they address key diabetes content areas, i.e., nutrition, activity, medication taking and monitoring, and risk reduction.Â One of the most effective ways to promote the inpatient management of the diabetic foot disorders is through medical education. Hospitals with large departments may provide an opportunity to speak at subspecialty conferences such as infectious disease, endocrinology, plastic surgery, vascular surgery, orthopedic surgery, and podiatry. Perioperative management. Patients hospitalized with diabetic foot problems frequently require surgery, which induces a period of heightened physiologic stress requiring a systematic and comprehensive approach to appropriately assess, and where possible mitigate, risk. Patients with diabetes have an equivalent risk of myocardial infarction to those known to have atherosclerotic coronary disease (57).