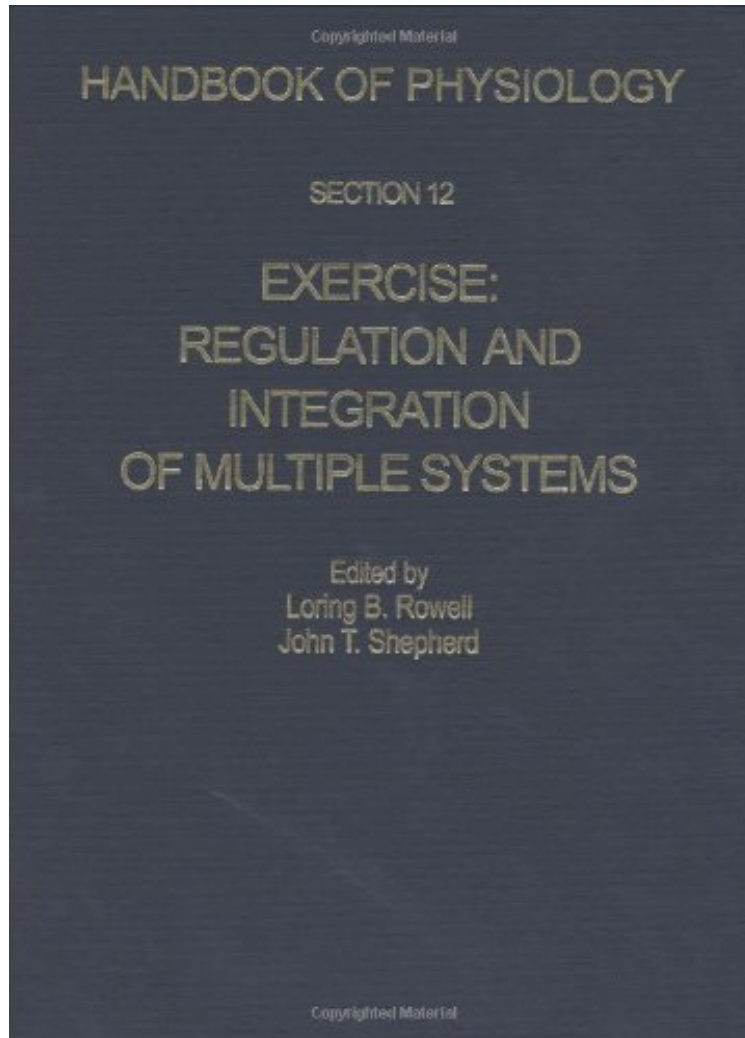


Handbook of Physiology: Section 12: Exercise: Regulation and Integration of Multiple Systems

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6 of 6 people found the following review helpful. Definitive Exercise Physiology Text of the 20th CenturyBy Scott BradleyIt is perhaps appropriate that at the culmination of the 20th century, some of the most eminent exercise physiologists have been brought together to author what is surely the definitive exercise physiology text of our time.

Unlike previous volumes of "Handbook of Physiology" which have investigated exercise physiology for each of the various systems (e.g. cardiovascular, respiratory etc), this text provides a complete and integrated overview of the entire body's physiological response to physical stress. Each chapter is authored by scientists who have not only made a significant contribution to their respective fields of speciality over the last few decades, but in most cases remain at the forefront of present day research. As such each section provides an unparalleled depth of review and extensive bibliography. Given the quality of each chapter it would be remiss of me to single out any particular section, but it should be said that this text is an essential addition to any serious exercise physiology library. Whilst the detail is challenging for undergraduate students, this text should become the ideal reference tool for postgraduate students and researchers world-wide.

This is the first section of the Handbook of Physiology to deal exclusively with exercise. It is also the first single volume to analyze in-depth the regulation and integration of motor, respiratory, cardiovascular and metabolic systems over the broad range of functions demanded by exercise. Its systematic examination of the regulation of these four systems draws from every area of physiology as well as from pharmacology, biochemistry, cellular and molecular biology and medicine. It highlights exercise as a uniquely powerful means of exploring the integrative aspects of whole body function. One feature of this volume is its in-depth analysis of the regulatory mechanisms responsible for the close matching of motor, respiratory, cardiovascular, and metabolic control during exercise. By combining studies of control at cellular and molecular levels with studies on whole animals, this Handbook provides the natural and logical integration that is a hallmark of physiology--and is also what lures many scientists to the study of exercise. The internationally recognized authors provide a critical analysis of the mechanisms that govern control of movement, breathing, pulmonary gas exchange, blood flow and blood pressure, and skeletal muscle metabolism. They examine both functional and structural limits to the performance of organ systems under severe stress and show how these limits can be altered by age and physical conditioning. In some cases this requires treatment of topics that have not been reviewed before such as how the heart interacts mechanically with the pericardium, lung, and chest wall to alter central hemodynamics. This volume offers a unique synthesis of fresh information and ideas about the physiology of exercise that will provide a basis for future investigations in this field. It sets a new standard for the physiological study of exercise and will be of keen interest and lasting value to physiologists, sports scientists, kinesiologists, cardiologists, motor control neurologists, and physicians.

"A rich bibliography....Should become a mandatory item for purchase by faculty libraries."--Canadian Journal of Applied Physiology
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