
Preface

There is scarcely a segment of health or performance that has escaped linkage to sleep. Over recent decades, anecdote has given way to experiment, yielding an explosion of information demonstrating that the field of sleep deprivation is indeed fertile ground. Yet despite key advances in many areas, the field faces a diversity of challenges ranging from philosophical to practical. This state of affairs need not lead to pessimism; it should instead inspire future research. In this volume, experts review the links between sleep and a spectrum of medical specialties as well as operational settings. Each chapter builds on a rich evidence basis, while at the same time highlighting the uncertainties we face in the interpretation of the existing literature as well as the pathways that promise to move us forward. The intention is to provide readers from clinical and research backgrounds alike not only with a firm grounding in each subspecialty area covered but also with the tools to use a critical approach to understand and perhaps investigate key areas of need for future work. Sleep is a dynamic process, and its study requires interdisciplinary perspectives to build coherent and cohesive narratives.

The first part, “Sleep Physiology, Measurement, and Experimental Deprivation,” provides a foundation for modern approaches to sleep and the impact of deprivation. The second part, “Sleep and the Brain,” highlights clinically relevant implications of sleep loss in the fields of neurology and psychiatry, including a chapter devoted to the therapeutic use of sleep deprivation in psychiatry. The third part, “Sleep and Medical Topics,” carries the bulk of the volume to emphasize the diversity of human physiology beyond the central nervous system that is impacted by sleep deprivation. The final part, “Performance, Economics, and Operational Topics,” covers a broad societal perspective regarding the implications of sleep for health and performance. In each chapter, discovery is balanced against uncertainty—and it is precisely this interface that drives future progress. It is hoped that this volume inspires progress by arming the reader with a breadth of knowledge, a multidisciplinary perspective, and of course a healthy skepticism that forms the foundation of scientific progress.

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