

The Editors are pleased to present the 19th edition of *Harrison's Principles of Internal Medicine*. Since the first edition was published 65 years ago, virtually every area of medicine and medical education has evolved remarkably, and many new fields have emerged.

While retaining the founding goals of *Harrison's*, this edition has been modified extensively in light of the varied needs of the book's readers and the diverse methods and formats by which information is now acquired and applied. The focus of medical education worldwide is shifting from the classic structure/function/disease approach to an integrated, often case-based approach in which basic and population sciences are specifically linked to the practical diagnosis and management of disease. Many of the updates and changes described here have been undertaken with the modern educational and clinical environments in mind.

This new edition offers a thoroughly updated presentation of the classic pathophysiologic basis of clinical medicine and details the cutting-edge methods and tools that are now available for the assessment of symptoms and the effective management of diseases in the modern patient-care environment. The text is supplemented by germane new photographs, radiographs, illustrations, atlases, patient-care algorithms, tables, and practical demonstrative videos.

In the interest of producing the most practical format possible for the 19th edition, a new system of referencing has been used. Detailed bibliographic listings, with summaries of articles' relevance to practice, appear in the online edition, replacing the general and limited collection of Suggested Readings that appeared in the prior print editions.

The 19th edition of *Harrison's* is designed for accessibility and flexibility. The print textbook is available in two volumes. Volume 1 focuses on the foundations of medicine and the understanding and assessment of cardinal disease manifestations; Volume 2 focuses on specific diseases, by system. This functional division will be helpful to students who are mastering the basis of clinical medicine and to clinicians who are more focused on gaining an advanced understanding of mechanisms and patient care in specific diseases. In terms of digital media, *Harrison's* is now available as an eBook on multiple platforms, as an enhanced "app" developed especially for tablet and smartphone devices that offer high-definition resolution of multimedia content and interactive features, and as an updated online edition. All of these options provide access to our numerous e-chapters as well as to videos and atlases. Additional resources include the *Harrison's Self-Assessment and Board Review*, a useful study guide based on information in the 19th edition, and the *Harrison's Manual of Medicine*, a pocket version of *Harrison's Principles of Internal Medicine*. A new *Harrison's* collection of case vignettes emphasizing differential diagnostic considerations in the assessment of cardinal manifestations will also be available.

Advances in medical science have been spectacular since *Harrison's* was first published in 1949. At that time, peptic ulcer disease was thought to be caused by stress, nearly every tumor that was not resected resulted in death, rheumatic heart disease was widely prevalent, and hepatitis B and HIV infection were unknown. In the intervening years, both the infectious cause of and the cure for peptic ulcer disease were identified; advances in diagnosis and treatment made it possible to cure two-thirds of cancers; rheumatic heart disease virtually disappeared; atherosclerotic coronary artery disease waxed and then—at least in part through management of modifiable risk factors—began to wane; hepatitis B and its consequences, cirrhosis and hepatocellular carcinoma, became preventable by a vaccine; and HIV, first viewed as a uniformly fatal worldwide scourge, became a treatable chronic disease. Notably, emerging and reemerging diseases have presented significant challenges to medical research and practice, while a new understanding of systems-wide concepts such as the microbiome offers exciting new possibilities for understanding and managing health and disease in ways never before possible.

Of particular note in this 19th edition are critical updates in the classic chapter on HIV/AIDS, which offers both a clinically pragmatic

focus and a comprehensive and analytical approach to pathogenesis. The updates cover the latest treatment protocols and address the issue of combination prevention modalities, making the chapter the most up-to-date and comprehensive treatise on HIV disease available.

Several other chapters likewise reflect the rapid pace of advancement in the field of immune-related diseases and their treatment. In this regard, Chapter 372e, "Introduction to the Immune System," serves as a mini-textbook of immunology for use in immunology courses. In addition, a new chapter on IgG4-mediated disease summarizes an important and newly recognized constellation of entities.

Readers will find expanded coverage of the neurodegenerative diseases, highlighting advances in their classification and management and delineating the new understanding of mechanisms responsible for the deposition and spread of pathogenic protein aggregates in these disorders. The chapter on chronic hepatitis discusses in detail the dramatic new discoveries in the use of direct-acting antiviral agents for the treatment of hepatitis C virus disease; these agents are responsible for some of the most exciting therapeutic advances in medicine today.

The rapidly expanding application of genetic knowledge to medicine is covered in many chapters, including a new chapter on microbial genomics and infectious diseases and substantially updated chapters on the human microbiome and chromosomal genetic disorders. Other new chapters address timely topics such as the impact of climate change on disease, infections in U.S. veterans returning from foreign wars, and advances in contraception and the treatment of infertility. Another topic of increasing interest, the impact of aging on health and disease, is addressed by several chapters, including a newly authored chapter on the biology of aging. A new chapter on men's health complements the updated chapter on women's health. New chapters also address diverse topics including the emerging field of tissue engineering, the examination of the comatose patient, the management of heart failure, the major characteristics of helminths and helminthic infections, specific cardiac valvular disorders, venous and lymphatic diseases of the extremities, renovascular disease, late complications of diabetes, chronic myeloid leukemia, heat-related illnesses, fatigue, polyglandular failure syndromes, and nonalcoholic fatty liver disease and nonalcoholic steatohepatitis.

Supplementing new content and updates on diseases and patient care, new videos in this edition cover sleep disorders, tissue engineering, noninvasive cardiac imaging, examination of the comatose patient, and myasthenia gravis and other diseases of the neuromuscular junction. New atlases for this edition address noninvasive imaging, percutaneous revascularization, and gastrointestinal endoscopy.

We have many people to thank for their efforts in producing this book. First, the authors have done a superb job of producing authoritative chapters that synthesize vast amounts of scientific and clinical data to create state-of-the-art descriptions of medical disorders encompassed by internal medicine. In today's information-rich, rapidly evolving environment, they have ensured that this information is current. Helpful suggestions and critical input have been provided by a number of colleagues; particularly notable was the advice of Chung Owyang on the Gastroenterology Section. We are most grateful to our colleagues in each of our editorial offices who have kept track of the work in its various phases and facilitated communication with the authors, with the McGraw-Hill Education staff, and among the editors: Patricia Conrad, Patricia L. Duffey, Gregory K. Folkers, Julie B. McCoy, Elizabeth Robbins, Anita Rodriguez, and Stephanie Tribuna.

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