Stoelting's Pharmacology & Physiology in Anesthetic Practice—5th Edition

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A detailed understanding of pharmacology and applied physiology is fundamental to the practice of anesthesiology, pain medicine, and perioperative medicine. Indeed, large portions of any of the major reference works in anesthesiology are specifically devoted to a comprehensive examination of anesthetic pharmacology and physiology. Is anything further required beyond these reference texts? Based on the success of his 1986 publication, *Pharmacology and Physiology in Anesthetic Practice*, and the ongoing popularity of subsequent editions, Robert Stoelting answered a resounding “yes” by filling a need with a supplemental text that is at once an in depth yet concise, current, and, above all, clinically relevant. As the editors of this latest edition state in their preface, “[the] textbook resonated with residents and young faculty, including us, because it was exceptionally well written”.

Now eponymously entitled *Stoelting's Pharmacology and Physiology in Anesthetic Practice* to reflect its origin, the fifth edition is the first multi-authored text, but it was edited with a goal to “approximate the single voice that distinguished previous editions”. There is also a major change in structure since the fourth edition published in 2006. While previous editions were organized into two sections in which pharmacology was separated from physiology, this latest edition essentially takes a systems approach. Following introductory chapters on the basic principles of both physiology and pharmacology, there are 38 chapters covering the neurologic, circulatory, pulmonary, blood and hemostasis, gastrointestinal and metabolic, and

endocrine systems. Additional chapters on antimicrobials, chemotherapeutics, and psychopharmacologic agents are grouped into a miscellaneous section. The remaining part considers special populations such as newborns, the maternal fetal unit, and the elderly. In all, the topics covered certainly remain comprehensive with no major omissions—though the next addition could benefit from inclusion of the critically ill as a special population. In an apparent holdover from the previous approach, there are the separate indices for drugs and physiologic subjects.

As a whole, this new systems-based structure of the text is welcome. It is rational and reflective of the general trends in medical education; however, as with any such approach, it is not always clear where best to place certain subjects within any one system. This leads at times to redundancy of content or, on first reading, apparent omissions. For example, nearly all of the intravenous vasopressor drugs are discussed in a well-written chapter on sympathomimetic drugs. Arguably, it might have been opportune to include a description of vasopressin at this point. Understandably, as vasopressin is not a sympathomimetic, its entry occurs quite removed from the catecholamines under a chapter entitled “Other Endocrine Drugs”. A real and glaring omission, however, is the absence of any discussion of the determinants of myocardial oxygen supply and demand, control of coronary blood flow, and coronary flow reserve which are of fundamental importance.

A great strength of this edition is that the text remains highly readable even with multiple authors. For example, as would be expected from such leading experts as Drs Flood and Shafer, the introductory chapter on “Basic Principles of Pharmacology” is especially well written for what is normally dry and daunting subject matter. A minor

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quibble is that some chapters begin with a highlighted introductory paragraph while most do not. Also, every chapter would likely benefit from a listing of key learning points. The result of having multiple authors and a systems-based approach is that multiple entries for certain topics are at times spread throughout the book without reference across chapters. For example, there is a very brief entry and corresponding figure describing ventricular pressure volume loops, which gives the impression that the entry is orphaned and likely misplaced in the chapter on circulatory physiology. In the subsequent chapter on cardiac physiology, the topic is revisited where it is appropriately placed and further explained.

The text makes good use of figures by combining line drawings taken from classic publications with newer full-colour graphics and tables. The latter are certainly impressive when viewed with the included downloadable interactive e-book, a feature that allows for searching and

linking text and references. At times, however, it appears that the availability of a good graphic image is driving the text and content. For example, the first figure in the chapter on cardiac physiology is a representation of mitral valve anatomy and a description of Carpentier's classification. It is not immediately apparent that this is a core aspect of cardiac physiology—especially for the targeted audience.

Overall, this edition retains the characteristic strengths of previous editions as it is very readable, clinically oriented, current, and comprehensive. Medical students and physicians in training will undoubtedly find the text useful in their studies, while practicing anesthesiologists will likely appreciate this update of a familiar and established text.

Conflicts of interest None declared.