

Diagnostic Imaging for Pharmacists

B.T. Smith and K.D. Weatherman, eds.

Washington, DC: American Pharmacists Association, 2012, 273 pages, \$74.95

This is a concise and comprehensive book for practicing pharmacists, pharmacy technicians, and pharmacy students to better understand diagnostic imaging and the pharmaceuticals used as part of the imaging process. Today, diagnostic imaging procedures play an essential role in medical care, and many of them directly dictate patients' treatment plans. Nevertheless, few practicing pharmacists have sufficient knowledge and comfort with issues related to diagnostic imaging and its pharmaceutical agents because most schools of pharmacy do not cover this area in their curricula. This book perfectly fills this gap and serves as a standard textbook.

The book is divided into 13 chapters, and its primary focus is on the pharmaceutical agents used in the imaging suite: contrast agents in radiography, CT, MR imaging, and ultrasound; radiopharmaceuticals in nuclear medicine; and traditional pharmaceuticals as interventional agents in various imaging procedures. The book also introduces the principles, features, and clinical applications of each type of imaging modality in this field. Moreover, the final chapter introduces the regulations associated with ionizing radiation in the United States and addresses the potential risk of unnecessary CT scans, which may cause additional radiation exposure to patients and personnel who are associated with the procedure.

Unlike most books on radiology and diagnostic imaging, this book has the pharmacist as its major target. Therefore, the authors have narrowed the pharmacologic agents to only those that have been approved by the Food and Drug Administration and are currently used in the clinic. For each agent, the authors intensively describe its dosage and administration, adverse effects, contraindications, and medication therapy management concerns. In addition, chapter 8 covers the nonradioactive pharmaceuticals that are most frequently used as adjunct agents in nuclear medicine imaging studies. These features are usually not covered in traditional radiology or nuclear medicine books.

Overall, this book serves as a great introduction to diagnostic imaging for pharmacists. Most chapters contain illustrative figures, helpful image examples, and informative tables. The chapters on nuclear medicine and its radiopharmaceuticals (chapters 5–7), however, are not as well composed as the other chapters. For instance, chapter 5 is assumed to serve as a general introduction to nuclear medicine, but unfortunately, it is not organized logically. The authors discuss the imaging agents in that chapter, but these heavily overlap with the content of chapter 6. Suggestions for the next edition include removing the discussion of imaging agents in chapter 5 and instead adding an introduction to radioisotopes for SPECT and PET. An illustration of SPECT and PET cameras may help the readers to better understand the principles of these imaging modalities. Furthermore, the addition of chapters on optical imaging and

MR spectroscopy to the next edition is suggested. Although not widely used in the clinic today, these 2 novel modalities certainly will become more crucial in diagnostic imaging.

At the end of each chapter, a comprehensive list of updated references is provided for readers who are interested in certain topics. For pharmacists who would like to further explore the field of radiopharmaceutical development and nuclear medicine, the third edition of *Radiopharmaceuticals in Nuclear Pharmacy and Nuclear Medicine*, described in the next book review, is recommended.

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Radiopharmaceuticals in Nuclear Pharmacy and Nuclear Medicine

R.J. Kowalsky and S.W. Falen, eds.

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Nuclear pharmacy and nuclear medicine continue to experience extensive growth and change with the development of new radiopharmaceuticals and technologies for the diagnosis and treatment of various diseases. This third edition of *Radiopharmaceuticals in Nuclear Pharmacy and Nuclear Medicine* updates the key topics of the second edition and reorganizes its chapters on the basis of a critical solicited review. A key change in this edition is the division of the radiopharmaceutical chapter into 3 chapters of extensive information. In addition, 4 new chapters have been added—microbiologic control of radiopharmaceuticals, with emphasis on U.S. Pharmacopeia 797 guidelines; special radiopharmaceutical topics, formulation problems, pediatric dosing, breast milk excretion, and adverse reactions; molecular imaging and new radiopharmaceutical development, including discussion of novel approaches and technologies; and clinical PET procedures—providing a breadth of fundamental diagnostic information. This book also has a new design, featuring a larger page size with 2-column format and 4-color high-resolution illustrations.

This book is designed as a comprehensive textbook on the chemical, physical, and biologic properties of radiopharmaceuticals and their applications in nuclear medicine. It is intended for courses on nuclear pharmacy and nuclear medicine but has also been useful both for professional practitioners and for those preparing for specialty board examinations in these disciplines since it contains essential information required by the state and

federal radiation licensing organizations for authorized nuclear pharmacists, nuclear medicine physicians, and technologists.

This book is organized into 3 sections with 30 chapters. The first section, chapters 1 through 12, deals with fundamental concepts of radiation physics, safety, biology, and radiopharmaceutical chemistry. The next section, chapters 13 through 18, discusses nuclear pharmacy practice, radiopharmaceutical preparation, quality control, and regulations, as well as the development of new radiopharmaceuticals and molecular imaging. The concluding section, chapters 19 through 30, covers diagnostic and therapeutic applications in nuclear medicine practice such as imaging of various organs, SPECT and PET, peptides, and antibodies. The chapters have more than 200 tables and more than 500 superb figures to enhance the understanding of key concepts and are supported by references.

This expanded, updated book is a comprehensive reference for practitioners and those preparing for examinations on nuclear pharmacy and nuclear medicine. It is also useful for educational programs on nuclear pharmacy and nuclear medicine.

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