RADIOPHARMACEUTICALS IN NUCLEAR MEDICINE PRACTICE.

R. J. Kowalsky, J. R. Perry, Norwalk, Connecticut, Appleton and Lange 1987, 516 pp, $95.00

This book is considered an information introductory text discussing the fundamental use and clinical application of radiopharmaceuticals in nuclear medicine. It is a welcome addition which is quite suitable for classroom use, as well as a handy personal reference. The book is well written and presented in a logical and conventional way. The quality of the paper, print and illustrations is excellent.

The book consists of 18 chapters. The first six chapters present the fundamentals such as an "overall" view of radiopharmaceuticals and their use in nuclear medicine, physics, chemistry as well as quality control of radiopharmaceuticals. Chapter 3 briefly discusses radionuclide generators with particular emphasis on the technetium-99m generator, while Chapter 5 contains useful information on nuclear pharmacy which includes pharmacy design, equipment and instrumentation required among other topics for an ideal safe radiopharmacy.

The next eight chapters discuss radiopharmaceutical use and their applications to major body systems. These systems are brain, cerebrospinal fluid, thyroid, heart, lung, liver, gallbladder, spleen and bone marrow, kidney and genitourinary systems, bone, and total-body imaging.

These chapters are well arranged as each chapter begins with a short introduction, followed by physiologic anatomy, a brief chronological development of radiopharmaceuticals used to study the organ system and the current agents of choice. Each chapter ends with a discussion of the clinical application of radiopharmaceuticals used in studying the particular organ system followed by a list of references to provide the reader with a more detailed literature of the topic discussed. These chapters include images, tables and graphs to illustrate normal and abnormal studies with interpretation of results.

Chapter 15 deals with the use of radiopharmaceuticals in nonimaging in vivo studies e.g., blood volume measurements, thyroid uptake and ferrokinetic studies among other tests. Chapter 16 discusses the basic principles used in in vitro studies performed by radioimmunoassays (RIA) with some few examples discussed. I believe this chapter should be expanded in future edition of the text. Chapter 17 is devoted to miscellaneous radiopharmaceuticals not discussed in other chapters, but are quite useful in nuclear medicine practice such as adrenal and thyroid glands imaging agents and detection of deep veinous thrombosis. Finally Chapter 18 deals with licensing, regulatory control and radiation safety aspects.

The level of this text is considered introductory to intermediate in the field. I highly recommend it to radiology and nuclear medicine residents, fellows, technologists and nuclear pharmacists and should be handy in their bookshelves. The book definitely provides a good basic foundation to students in these disciplines and useful companion to their classroom lectures.

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RADIONUCLIDES IN NEPHROLOGY.

A. Bischof-Delaloye and M. D. Blaufox, Eds. Karger Press, Basel, 1987, 276 pp, $149.50

This publication represents the proceedings of the sixth International Symposium on Radionuclides in Nephrology, held in Lausanne, Switzerland, in May, 1986. It is part of a larger series of works entitled *Contributions to Nephrology.* Including the preface, there are 47 chapters written by participants from twelve different countries. Four of the chapters are review articles, the other 42 are reports of experiments which were presented at the Symposium.

The topics are divided into eight major subheadings which include renal physiology, radiopharmaceuticals, renal function, hypertension, nuclear magnetic resonance, transplantation, metabolic disease, and urological disease. Substantial attention is paid to relatively new developments in nephrology such as captopril renography, diuretic renography, diagnosis of cyclosporine toxicity in the transplanted kidney, nuclear magnetic resonance (NMR) (including Gd-DTPA), and lithotripsy. A few papers deal with subjects as diverse as parathyroid and bone imaging.

The contributers are all well recognized in the field of renal nuclear medicine. By and large, the experiments are well thought out and well executed, and the review papers are well written and very useful. Despite the fact that for the majority of the authors, English is a second language, most of the papers are quite readable and clear. There are few typographical errors.

The quality of reproduction of photographs ranges from fair to excellent. Most scintigrams are clear, but all the NMR images are too small and too crowded. The histologic slides on page 55 are too small to be of much use. There are many graphs and tables which, with some exceptions, tend to be quite busy and not very clear. The paper, print, and binding are of good quality, but the cover is flimsy and not very durable.

This volume speaks to a rather limited audience. Although the review article on renin by Brunner et al, is excellent and would be useful to practicing nuclear physicians, it is about the only such chapter that is. The articles on renal radiopharmacy by Blaufox and on NMR by MacIntyre are very good as well, but the subjects are in such flux at present, that they will soon be obsolete. The experiments are all interesting, but there is little in any of them that can be adapted very readily to clinical practice by most practicing nuclear physicians. Thus, this is not a text to be recommended to residents, technologists, or the great majority of scintigraphers. It might be a useful addition to medical libraries of larger institutions

and would be a worthwhile purchase for those individuals and departments doing a lot of sophisticated renal scintigraphy.

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AGE-RELATED FACTORS IN RADIONUCLIDE METABOLISM AND DOSIMETRY.
G. B. Gerber, H. Metivier, H. Smith, Eds. Dordrecht, The Netherlands, Martinus Nijhoff Publishers, (available in the United States and Canada from Kluwer Academic Publishers, MA) 1987, 416 pp, $118.50

This book is the proceedings of a workshop on "Age-related Factors in Radionuclide Metabolism and Dosimetry", sponsored by the Commission of the European Communities and the Commissariat a l'Energie Atomique and held in Angers, France, November 26–28, 1986.

The metabolic models primarily used for calculating absorbed radiation doses have been developed from studies on adult humans or experiments on adult animals. As noted in the preface of this book, the application of these models to predict doses to the general public is complicated by the fact that the population contains embryos, fetuses, infants and children whose metabolism may differ greatly from that of adults. This workshop was held to provide data to remedy this situation.

The proceedings of this workshop include information on gastrointestinal uptake and inhalation pathways of radionuclides in infants and children and on the metabolism of radionuclides in developing bone, thyroid and other organs. Many papers report results of studies pertaining to age-related changes in the metabolism of metals and heavy elements such as plutonium, americium, and neptunium.

Although the book has no index to help the reader find specific information, the 45 papers are grouped according to subject matter. The first seven papers concern gastrointestinal absorption as a function of age, including suggested revisions to the ICRP model of the passage of material through the GI tract. The next five papers provide information about respiratory function and inhalation pathways in infants and children. Aerosol deposition in adults and children is also compared. The review of dosimetric lung models by James and Roy discusses the dose from domestic exposure to radon.

Nine papers pertain to metabolism of various bone-seeking materials and includes a review of ossification and mineral metabolism in children. Information about distribution and retention of radium in subjects under study at Argonne National Laboratory is presented in a few papers. Of potential interest for calculating radiation doses from monoclonal antibodies is a paper by Priest that describes an age-related model for the dosimetry of alpha-emitting, bone surface-seeking radionuclides.

Nine papers give data on metabolism of specific radionuclides at various ages. Included in this collection are papers on radioiodine, tungsten-178, and metabolism and risks from tritium and carbon-14. The next three papers deal with approaches to age-dependent modeling for dose estimation.

The next 11 papers are concerned with radiation dose estimation for the embryo/fetus. Three review papers are included: "Physiology of Transfer" by Wegst; "Placental Transfer of the Actinides and Related Heavy Metals" by Sikov; and "Placental Transfer of Other Radionuclides" by Stieve. Two papers in this group describe mathematical models of the pregnant woman, one at three-months and one at nine months. One paper compares the effectiveness of ^{131}I and ^{125}I in producing developmental changes in mice. The remaining papers in this group provide data on the dose from specific radionuclides at different gestational ages.

The next paper by Kaul and Roedler is a discussion of problems associated with the use of ICRP models for estimating doses and dose equivalents for the general population. The book ends with a summary of a panel discussion that follows up on the implications of Kaul and Roedler's paper and identifies areas for future research.

Because the book was produced directly from camera-ready copy provided by the authors, the type varies somewhat throughout but the overall appearance is not unpleasing. Figures are clear and generally of good quality. As might be expected, the styles of the authors differ. All papers are in English but the fact that English is not the primary language for many authors does not appear to be a major problem.

The information presented at this workshop and included in this book is of most interest to people engaged in radiation protection; however, others who are interested in fetal transfer of materials and in metabolism as a function of age will find the book useful. The review papers, in particular, are informative, concise, and well-written.

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Books Received

Rational Use of Diagnostic Imaging in Paediatric. *World Health Organization. Geneva, World Health Organization, 1987, 102 pp, $8.40*

Building a Healthy America: Conquering Disease and Disability. *T. L. Lierman, Ed. New York, Mary Ann Liebert, Inc., 1987, 218 pp, $19.00*

Images, Signals and Devices. *C. J. McDonald, Ed. New York, Springer-Verlag, 1987, 120 pp. $29.50*

Noninvasive Diagnosis of Peripheral Vascular Disease. *W. R. Felix, Jr., Ed. New York, Raven Press, 1987, 265 pp, $59.00*

Magnetic Resonance Annual—1988. *H. Y. Kressel, Ed. New York, Raven Press, 1987, 357 pp, $69.50*