

**Photon, Electron, Proton and Neutron Interaction Data for Body Tissues.** ICRU Report 46. International Commission on Radiation Units and Measurements, Bethesda, 1992, \$40.00.

This report "provides specific information on representative sets of tissues that illustrates the effects of tissue composition on some pertinent radiation interaction quantities." Data are included on photons and electrons from 10 keV to 100 MeV, protons from 1 MeV to 500 MeV and neutrons from 25 meV to 30 MeV for interactions in soft tissues, skeletal tissues and calculi across an age range spanning the fetus to the adult. The report consists of three sections and two appendices. The first section defines and specifies the relevant interaction coefficients and dosimetric quantities. The second describes the composition of body tissues. Details of interaction calculations are given in the third section. The appendices include the elemental compositions, mass and electron densities of body tissues as well as photon, proton, electron and neutron interaction data. The authors recommend that this report be used in conjunction with ICRU Report 44 (1989), "Tissue Substitutes in Radiation Dosimetry and Measurement," available for \$40.00 from the ICRU.

**James A. Scott**  
*Massachusetts General Hospital*  
*Boston, Massachusetts*

**Imaging Techniques of the CNS of the Neonate.** J. Haddad, D. Christmann, J. Messer, editors, Springer/Verlag, New York, 181 pages, 1991, \$189.00.

The editors, along with 12 contributors, set out to highlight the use of imaging techniques in the diagnosis of CNS injuries in the neonate. It is an original contribution, combining both morphological (US, MR) and functional (Doppler, magnetic resonance spectroscopy, PET, SPECT and near infrared spectroscopy) evaluation of the neonatal brain into one source. They succeed well in their effort with an easy-to-read short outline.

There are eight chapters. The introductory chapter contains a simple introduction to the principles of MR. Chapter 2 has a straightforward, simple overview of MR applications in the neonatal period. Neonatal cranial ultrasound is nicely covered in some depth in Chapter 3, followed by a Doppler discussion (unfortunately without color) in Chapter 4. Chapter 5 elegantly describes the principles and techniques used in magnetic resonance spectroscopy. The same holds true for Chapters 6 and 7, which discuss near infrared spectroscopy and SPECT. Both chapters are nicely tailored to the neonatal age group. Chapter 8, a review published in *Clinics of Perinatology*, discusses PET of the neonatal brain.

The references, which are inclusive of some 1991 publications, are adequate. The illustrations are of very good quality and most of the tables are easy to read, with the exception of Tables 5.4 and 5.5, where the numbers are dizzying, or Table 2.4, where the reader is overwhelmed by information. It is unfortunate that the terminology of the T1- and T2-weighted images is not of a uniform character.

All in all, this is a useful primer for those wishing to get a feel for what is current imaging of the CNS in neonates, both of an anatomic and functional nature. I am unaware of other compar-

ative short texts and expect the most suitable audience for the book to be beginning pediatric (imaging) research oriented practitioners.

**Johan G. Blickman**  
*Massachusetts General Hospital*  
*Boston, Massachusetts*

**Measurement of Dose Equivalents from External Photon and Electron Radiations.** ICRU Report 47. International Commission on Radiation Units and Measurements, Bethesda, 1992, \$40.00. This report details the measurement of operational quantities "that provide, when determined under appropriate conditions, an adequate and conservative measurement of  $H_E$  [the effective dose equivalent] for the most commonly encountered external ionizing radiations." These include photons, neutrons and electrons of energies less than 20 MeV. The report deals with routine radiation protection and does not address accident dosimetry or radiotherapy dosimetry. It is divided into several sections. Most of the chapters discuss principles of measurement and the characteristics and calibration of different measuring instruments with emphasis on the operational quantities presented. The last chapter discusses the impact of new operational quantities on the design of future instrumentation (environmental monitors and individual dosimeters) with respect to strongly and weakly penetrating radiation measurements. An appendix details conversion factors between the operational quantities and those quantities used in primary standardization.

**James A. Scott**  
*Massachusetts General Hospital*  
*Boston, Massachusetts*

**Cardiología Nuclear.** J. Candell and D. Ortega eds. Doyma, Barcelona, 1992, 369 pages.

The Spanish-written text of this multi-author book compiles the full range of nuclear cardiology procedures available for patient care. The volume is divided into 21 chapters with liberal use of tables and figures.

The first three chapters describe the radiopharmaceutical production, instrumentation and fundamentals, physical stress tests and pharmacological intervention modalities. This section is clear and concise and special attention is paid to scan interpretation and image processing techniques.

Nuclear cardiology procedures are extensively described in the following seven chapters, ranging from myocardial perfusion studies to cardiac functional assessment. Different tracers and techniques available to assess myocardial perfusion, including SPECT and quantitative methods such as circumferential profile analysis, are extensively discussed. A detailed description of radionuclide techniques to evaluate ventricular function and to assess ventricular volumes is provided. This section is illustrated with examples of commonly encountered conditions.

Clinical applications are developed in the next section of the book. Seven chapters are arranged to present the yield of nuclear cardiology techniques in the diagnosis of coronary artery disease.

diagnosis of acute myocardial infarction, risk stratification and prognosis, valve disease and cardiomyopathies. The last section of the book (four chapters) is arranged to discuss the comparative diagnostic yield of nuclear cardiology techniques in clinical practice and the cost/benefit analysis in nuclear cardiology.

This comprehensive textbook should serve as a useful tool for Spanish-speaking nuclear physicians, cardiologists and anyone else interested in nuclear cardiology.

**Ignasi Carrió**  
*Hospital de Sant Pau*  
*Pare Claret, Spain*

**Nuclear Medicine Annual 1992.** Freeman LM, ed. New York: Raven Press; 1992, 240 pp, \$105.00.

The 1992 edition of the *Nuclear Medicine Annual* includes chapters on hibernating myocardium (Bonow and Dilsizian), bone SPECT (Krasnow et al.), radionuclide therapy of bone metastases (Mertens et al.), monoclonal antibodies (Wahl), interventions in pediatric studies (Sty and Wells), amyloidosis (Krasnow et al.) and acquired renal disorders (Sfakianakis et al.).

Krasnow and coauthors present a comprehensive review of the applications of SPECT in bone imaging. The review presents a compelling case for the clarification of planar findings with SPECT imaging. More research will be required to establish the relative clinical roles of SPECT, CT and MRI in skeletal disease.

Richard Wahl provides a fine and practical overview of the current status of monoclonal antibodies. Dr. Wahl "tells it like it

is" in a refreshing and clinically useful manner.

Dilsizian and Bonow provide a clearly formulated discussion of the "stunned myocardium" as it relates to radionuclide imaging. They emphasize the clinical choices between rest, redistribution and reinjection  $^{201}\text{Tl}$  imaging as well as the metabolism/perfusion "mismatch" on PET studies.

George Sfakianakis and coworkers include a comprehensive chapter on acquired renal disorders, providing an up-to-date procedural briefing on protocols for detecting renovascular hypertension.

These and the other chapters make the 1992 Annual, as usual, a useful addition to the library of all practicing nuclear physicians.

**James A. Scott**  
*Massachusetts General Hospital*  
*Boston, Massachusetts*

## Books Received

**Positron Emission Tomography of the Heart.** Steven R. Bergmann and Burton E. Sobel, Mount Kisco, NY, Futura Publishing Co., 1992, 313 pp, \$98.00.

**Proceedings of the Fifth International Radiopharmaceutical Dosimetry Symposium.** Held in Oak Ridge, Tennessee. ORISE/ORAU, Oak Ridge, TN, 1992, \$50.00.

**Imaging of the Spine and Spinal Cord.** Claude Manelfe, ed, Raven Press, New York, 1992, 910 pp, \$170.00.