ATLAS OF POSITRON EMISSION TOMOGRAPHY OF THE BRAIN.

W.D. Heiss, C. Beil, K. Herholz, G. Pawlick, R. Wagner, K. Wienhard. New York, Springer-Verlag, 1985, 130 pp, $52.00

This book is intended to instruct nuclear physicians ready to use nuclear imaging with positron emitters. This is an important objective since one senses that there will be an increasing number of nuclear medicine specialists in PET imaging in the next few years. The book is fairly comprehensive as an atlas and there are many excellent pictures. The average figure is accompanied by concise clinicopathological and computed tomographic scan data (with a smaller number of nuclear magnetic resonance images). There are many physiological concepts that are discussed in relation to the figures. Many laboratories in several sites around the world contributed figures. Virtually every topic of positron emission tomography (PET) applications to the study of central nervous system disorders is covered in the atlas. The quality of the paper utilized and printing results are very good. Each figure is presented with legends in German and English. The English legends are for the most part easily read. Since PET techniques were different in the different laboratories, the figures are not of even quality. For instance, the figures recorded in the authors' laboratory present noisy PET data. A problem is that the figures do not often have arrows to indicate small structures such as the striatum, Broca's region, cerebellum, to name a few. The vertical direction of the color scales is either from lowest to highest numerical values or from the highest to the lowest ones. This may be confusing to readers.

The text is necessarily short but largely adequate. The tracer kinetic discussion of the recorded data is dealt in detail, and limitations of tracer kinetic models considered. The Atlas covers PET oxygen metabolism studies, brain blood flow studies, radiolabeled deoxyglucose investigations which are very thoroughly presented, protein synthesis investigations, and some examples of neuroreceptor imaging.

Two chapters deal with PET studies of brain pH and with newer PET tumor markers. There are four chapters on the methodology for PET imaging covering instrumentation, radiopharmaceuticals, and tracer kinetics. References for each chapter are adequate.

This atlas will be of interest to nuclear physicians wishing to pursue PET scanning as a new modality; this book is recommended to them. The price appears reasonable given the quality of the illustrations.

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PROGRESS IN MEDICAL RADIATION PHYSICS, VOLUME 2.

C.G. Orton. New York, Plenum Press, 1985, 254 pp, $45.00

This volume in the *Progress in Medical Radiation Physics* series contains in-depth (22-111 pp) review articles on conformation external beam therapy, measurement in vivo of human body composition, medical applications of fluorescense radiation in elemental analysis, and basic imaging properties of radiographic systems. The articles are very well written by internationally known authorities, and I found them interesting and well-illustrated. However, none of them has any connection with clinical nuclear medicine. Nuclear medicine physicians and technologists are not likely to find much of interest to them, but physicists interested in keeping in touch with other subspecialty physics topics would appreciate this book. Unless a person intended to work in one of the topical areas covered, the price makes this more of a central library volume rather than for one's own bookshelf.

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MANUAL OF CLINICAL MAGNETIC RESONANCE IMAGING.

J.P. Heiken, H.S. Glazer, J.K.T. Lee, W.A. Murphy, M. Gado, Eds. New York, Raven Press, 1985, 124 pp, $19.50

This small (5″ × 8″ × 124 pp) paperback is the epitome of a concise communication. Seldom is so much information so effectively presented in so few words. The authors emphasize that this is not a textbook on magnetic resonance imaging (MRI) but a guide to conducting the examination. They believe these guidelines are applicable to most commercially available systems.

The book is divided into two major sections. The first, consisting of three chapters, deals with the physics and principles of magnetic resonance imaging. These three chapters are an excellent summary of the basic principles and the major artifacts encountered in MRI. The discussion of physics and image formation are accurate and clearly presented. The figures, which are all line drawings, and the captions are clear and informative. The figure captions are complete enough that one could almost use the figures and captions alone as an even more condensed, yet readable, description of the topic.

My biggest criticism of the first two chapters is that there are no images. Particularly for the discussion of pulse sequences, flow, and spectroscopic imaging, images would have been helpful. The third chapter describes and illustrates imaging artifacts, including motion, metal implants, chemical shift misregistration, static electricity, wrap around, and low intensity ghosts.

The second half of the book presents guidelines for conducting the examination. Chapter four speaks to some practical considerations of patient safety and patient preparation. Chapter five describes the imaging protocols with specific comments on selecting the zero reference frames along three axes, questions related to multisection imaging, and the relationship of the number of sections to the repetition time.

Most of the second half of the manual consists of tables of recommended instrument parameters. There is one for each of 45 types of examinations. For example, there is a table for