

## **Nuclear Medicine Technology and Techniques, Second Edition**

*Donald Bernier, James K. Langan, Paul Christian, K. David Wells, Editors, CV Mosby, 1988, 610 pp., \$55.95.*

This is the second edition of *Nuclear Medicine Technology and Techniques*, first published in 1981. There is a new editor, Paul Christian, who many will recognize as the former editor of *The Journal of Nuclear Medicine Technology* and many new names as authors of the various chapters, totaling 50 contributors. This edition has been dedicated to the memory of Daniel R. Biello, MD, and Paul Cole, CNMT, both significant contributors to the profession of nuclear medicine technology.

As in the previous edition, the first half of the book begins with the basic sciences and the remainder pertains to clinical imaging, including anatomy, physiology, pathology, and procedures for each major body system. The final chapter discusses radioimmunoassay. A welcome addition is a separate chapter on quality assurance, which includes radiopharmaceuticals and patient care as well as instrumentation. There also is a new chapter on nuclear magnetic resonance imaging.

Chapters covering the basic sciences are well done, however, additional texts are necessary when used in educational programs for a more in-depth presentation of physics, instrumentation, and radiopharmacy as well as computers.

The second half of the book, *Clinical Nuclear Medicine*, gives an excellent overview of all nuclear medicine procedures. Many of these chapters have been expanded to include new developments in the field. For example, the chapter on the central nervous system, which formerly included only planar imaging, now encompasses both SPECT and PET imaging. The chapter on the cardiovascular system has been authored by an entirely different group and, therefore, the images and diagrams presented are

new. The addition of SPECT and PET imaging of the heart also brings this section up to date.

The chapter on the gastrointestinal system was written by an entirely different group of authors and subsequently has doubled in length. It starts at the beginning of the alimentary canal with procedures for imaging the salivary glands and progresses through all the procedures including breath testing for intestinal bacteria.

These most welcomed additions have updated this text from nuclear medicine procedures used in 1981 to the current applications and procedures used in 1989. *Nuclear Medicine Technology and Techniques* is a good composite of the didactic curriculum for nuclear medicine technology programs, but, as previously stated, it cannot be the only text used in the nuclear medicine technology curriculum. It does, however, contain an excellent review for certification examinations and is a text of choice for students to keep as a reference as they begin their careers as nuclear medicine technologists.

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## **Exploring Medical Language: A Student Directed Approach, Second Edition**

*Myrna Weber LaFleur, Winifred K. Starr, C.V. Mosby Co., 1989, 587 pp., \$24.95.*

This book is well suited for the independent study of medical terminology. As the title implies, individuals using this workbook-style text actively participate in the learning process while setting their own pace.

Using the same format for this edition as the first, the authors introduce word parts and rules for combining them into

medical terms in chapter one. Chapters two through fifteen are devoted to body structures and systems. Each of these chapters is composed of multiple word lists divided into anatomical, pathological, surgical, and diagnostic procedures and miscellaneous terms. The final chapter covers directional terms and anatomical planes and regions. Anatomical diagrams as well as illustrations of certain pathologies and diagnostic and surgical procedures add interest to each section and complement the word lists.

According to the authors, the second edition includes more illustrations, terms related to oncology, and new terms that have joined the vocabulary as a result of advances in the medical field. Supplemental instructional materials available from the publisher include audiotapes to assist in pronunciation, a computer-assisted learning program, and an instructor's manual with over 1,000 multiple-choice questions. Within the text itself, however, there are an abundant number of exercises to assist learners in expanding their medical vocabulary. On average, most chapters contain about thirty exercises. Answers are provided for all exercises, and each exercise is keyed to a learning objective stated at the beginning of the chapter. A shortcoming of this book is that the exercises are monotonous and unrelated to how medical terms are used in the clinical setting.

There is no denying that health care personnel must have a command of medical terminology if they are to function effectively in the clinical setting. This reviewer keeps seeking a medical terminology text that will be interesting with less rote memorization and repetitive drills. Alas, while this text is extremely well organized and uses sound educational techniques, it too falls short of expectations. Perhaps the nature of the task precludes the ideal book.

Until an ideal text is written, this book can best serve as an introduction for those just beginning to learn medical terminology. For nuclear medicine tech-

nology students, certain chapters, such as Obstetrics and Neonatology or the Ear, may not be directly relevant to daily practice. However, the organization of the text permits such sections to be skipped over without compromising the continuity of the material.

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### Atlas of Clinical Nuclear Medicine

*Ignac Fogelman and Michael Maisey, The C.V. Mosby Co., 1988, 950 pp., \$195.00.*

The authors present a "comprehensive atlas" of clinical nuclear medicine studies. This clinical atlas contains over 3,000 illustrations, containing chapters on bone, thyroid, renal, brain, liver and spleen, lungs, and cardiac studies. There is an additional chapter of miscellaneous studies covering localization of infection and inflammation, localization of tumors, bone marrow imaging, lymphatic and lymph node imaging, gastrointestinal studies, intestinal studies, scrotal imaging, adrenal gland scanning, parathyroid gland localization, salivary gland scanning, and lacrimal drainage scanning.

Each chapter begins with very concise information or a table describing the radiopharmaceutical to be applied in studying each organ. This is followed immediately by normal scans of each study type to be discussed in the chapter. Normal variance and occasionally some image artifacts are also shown. Clinical cases are then presented encompassing a wide variety of disease presentations for each type of scan. Diagrams and tables are presented to add valuable information. Highlighted boxes indicate teaching points, describing a particularly important aspect relating to case presentations.

Although the chapters somewhat indi-

cate that they outline a comprehensive study by organ systems, they relate primarily to the most frequently performed procedures for that organ system. This text reflects the procedural preferences of the authors' department—presenting thyroid uptake studies done with perchlorate instead of iodine, many thallium scans performed with planar imaging instead of SPECT, a lack of a significant number of examples of renal studies performed with hippuran, etc. This text could be strengthened by providing more examples of SPECT imaging, primarily relating to thallium imaging, and clinical examples of brain imaging with IMP or HMPAO to bring the text up to current clinical applications.

Overall, this is an outstanding atlas. The selection of cases covers a diversity of diseases and has an adequate representation of example cases. All case studies and example photographs are of high quality and photographic reproduction is excellent. Additional figures, tables, diagrams, and images from other modalities supplement the case presentations.

Technologists and physicians alike should find this a useful reference in their department libraries for reviewing disease presentations for a variety of nuclear medicine procedures.

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### Quality Assurance For Diagnostic Imaging Equipment: NCRP Report #99

*National Council on Radiation Protection and Measurements, 1988, 250 pp., \$18.00.*

NCRP Report #99 is a comprehensive document that attempts to cover the whole gamut of quality assurance and quality control issues in medical imaging. This report matches the format of

most other NCRP reports except that it is somewhat thicker and attempts to focus on several imaging modalities rather than one.

Despite the title, the first five chapters are not directed at imaging equipment but address rather more general aspects of quality assurance. The fifth chapter is particularly valuable in that it directs its attention towards the management of personnel activities. Several examples are provided, which should call the attention of department managers and imaging physicians to aspects of quality assurance outside of the normally accepted realm of equipment performance.

If any criticism is to be levelled at these initial chapters, it is that they consistently use radiography as the imaging modality for purposes of example. Later chapters concentrate on other imaging modalities, but it is manifestly evident that the greatest attention has been paid to radiography.

This reviewer does not feel competent to comment in detail on those chapters dealing specifically with radiography, CT, ultrasound, and MRI. In any case, readers of the *Journal of Nuclear Medicine Technology* are more likely to be interested in Chapter 16, which deals with nuclear medicine equipment.

Here they will face disappointment. Despite its publication date of December 30th, 1988, the latest dates of any references are 1986 and these are few and far between. The material is sadly out of date and incomplete. References are made to count adding and count skimming techniques for scintillation camera uniformity correction. Such systems were obsolete well before 1988. It is ironic that in the section on SPECT, there is the statement that "in the rapidly changing field of SPECT, the user should keep abreast of the current literature." This is probably the best advice contained in that chapter. What a pity that the NCRP failed to follow its own advice.

Another example of out-of-date-ness appears on page 141 where there