

NMT Bookshelf

SCINTILLATION CAMERA LUNG IMAGING: AN ANATOMIC ATLAS AND GUIDE

Charles H. Mandell, Grune & Stratton, New York, NY, 1976, \$28.00

The goal of this book is to aid the physician in the interpretation of scintillation camera images of the lung. One of its most novel features is a series of images of lung models in which lesions of various segmental arteries are viewed in six projections (anterior, posterior, both laterals, and both posterior obliques), both as "cold" and "hot" lesions.

Properly studied and compared with actual cases, these images should be helpful learning aids. A second desirable feature is the emphasis on and examples of the use of posterior oblique views, which are becoming more and more routine throughout the field of nuclear medicine.

A weakness of the book is too little emphasis on Xenon-133 studies of regional ventilation, which are, in my opinion, the greatest aid in increasing the relative specificity of radioactive tracer studies in the differential diagnosis of different lung diseases. Also inadequately covered is the characteristic difference between posterior and anterior views in the supine patient with pleural effusion.

All in all, though, the concepts, photographs and text are useful. This book should help in this area of nuclear diagnostic medicine that is still difficult.

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THE BASIC PHYSICS OF RADIATION THERAPY (2nd Edition)

Joseph Selman, Springfield, IL, Charles C. Thomas, 1976, 715 pp, \$25.75

This book should be welcomed by all involved in the training of radiation therapy technologists and radiation oncologists. It can serve as an accepted basic textbook for an introduction to radiation physics, treatment planning, radiation biology, and health physics.

As might be surmised, no text can cover all these topics in the detail needed by today's professional, but in 715 pages, Dr. Selman has presented most of the principles in an easy style that is reasonably free of ambiguity.

The book is a complete revision of the first edition and has included a more relevant coverage of external beam dosimetry, a better discussion of radiation protection, and an interesting account of the development of time-dose concepts.

On the negative side, too much effort remained on the use of orthovoltage equipment and too little on the use of linear accelerators. Some attention should have been given to the use of simulators and how to obtain an acceptable localization radiograph. A discourse on the role of treatment-planning computers would have been a worthy substitute for space given to diagnostic uses of radioisotopes. Lastly, more rigor should have been given to basic physics, such as the discussion of systems of units to better prepare the reader for handling the radiation physics relationships.

In a rapidly moving field such as radiation therapy, it is not possible for any comprehensive description to remain current, but Dr. Selman's book will remain a solid introduction to the field for several years to come.

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ICRU REPORT 25 CONCEPTUAL BASIS FOR THIS DETERMINATION OF DOSE EQUIVALENT.

International Commission on Radiation Units and Measurements, Washington, DC, 21 pp.

As the title implies, this report is the most recent of a series of reports dealing with radiation units and measurements. Report No. 25 is some 21 pages in length. As such, it constitutes a pamphlet or monograph rather than a book and it deals in precise terms with the concept of "dose equivalent" in five chapters plus three appendices.

The report is authored by a committee of the ICRU consisting of five persons well renowned for their work in this area: H. H. Rossi, (Chairman), D. Beninson, H. J. Dunster, B. Lindell, and H. O. Wyckoff.

Dose equivalent is the absorbed dose modified by a factor to include the magnitude or probability of biological effect. As such, it is claimed to be more relevant than the absorbed dose alone. After defining dose equivalent, the report deals with the various quantities involved and their interrelationships, and then with the application of these terms to the doses calculated for radiation protection purposes. The last section deals with the means by which the dose equivalent index may be measured. Three appendices are included to specify the hierarchy of radiation quantities, absorbed dose, and the effects of angular distribution of the incident radiation, respectively.

Like the other ICRU reports, this one is worded very carefully and concisely. Each sentence and paragraph is chosen such as to avoid ambiguity and no words are

wasted. Because of this, it is not an easy book to read and consequently fosters the notion that scientific documents are not to be read by the uninitiated. The document would be aided considerably by the inclusion of a few diagrams rather than using precise terminology to define various criteria.

This is not a book which every nuclear medicine technologist will need, or want, to read. It is directed at physicists and dosimetrists and as such serves its purpose well. Instructors may also wish to obtain a copy since the concept of dose equivalent is certainly one of which technologists should be aware even though it is hardly like to affect the practice of their technology.

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NCRP REPORT NO. 49: STRUCTURAL SHIELDING DESIGN AND EVALUATION FOR MEDICAL USE OF X-RAYS AND GAMMA RAYS OF ENERGIES UP TO 10 MeV

National Council on Radiation Protection and Measurements, Washington, DC, 1976, 126 pp.

While hardly a publication the *New York Times* Book Review would cite as a good read, the newest NCRP

report continues the Council's tradition of authoritative and comprehensive handbooks. This National Council on Radiation Protection report, No. 49, contains the necessary computational tools to design radiological shielding for diagnostic x-ray, radiation therapy, and brachytherapy installations. As such, it supercedes NCRP Report No. 34, issued in 1970.

The textual changes from the older report are rather minor with most of the revision being in the shielding requirement tables for 50- to 300-kVp x-rays based on new data by E. Dale Trout's group. An additional change is from one of citing room dimensions in meters instead of feet and wall thickness in centimeters, not inches. While someone has to be first in this transition, I fear a long wait until I receive my first set of architectural drawings in metric.

While the primary audience for this report, the radiological physicist, will certainly be happy to replace his dog-eared copy of No. 34 with this new edition, nuclear medicine technologists will also wish to add this modestly priced handbook to their collection for its explicit exposition of room shielding design and its extensive tables.

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Word Find Answers

These are the answers to the Word Find Puzzle that appeared in the March 1977 issue of the JNMT (page 14). The puzzle was submitted by Lynne Wells.

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| 1. Absorption | 19. Mean Life |
| 2. Agglutination | 20. MeV |
| 3. Allergy | 21. Monitor |
| 4. Anode | 22. Neutral |
| 5. Atomic Mass | 23. Pig |
| 6. Background | 24. Pile |
| 7. Betatron | 25. Pion |
| 8. Core | 26. Plateau |
| 9. Deadtime | 27. Radionuclide |
| 10. Decay | 28. Rep |
| 11. Dosimeter | 29. Rest Mass |
| 12. Gamma Rays | 30. Shield |
| 13. Gene | 31. Source |
| 14. Half-life | 32. Spectrum |
| 15. Ion | 33. Tracer |
| 16. Isotope | 34. Velocity |
| 17. Label | 35. Zeeman Effect |
| 18. Mass | |

