NMT Bookshelf

NRCP REPORT NUMBER 43: REVIEW OF THE CURRENT STATE OF RADIATION PROTECTION PHILOSOPHY

L. S. Taylor, Washington, D.C., National Council on Radiation Protection and Measurements, 1975, 50 pp, $3.50.

The National Council on Radiation Protection and Measurements (NRCP) is composed of 13 members, 5 of whom serve as an ad-hoc committee. These 5 members are responsible for comparing radiation protection practices and are the primary authors of this booklet.

After reviewing the recent developments (since 1971) relating to radiation standards for the public, particularly in regard to extrapolated estimates of cancer risk, the NCRP has concluded that no changes are required in the standards at this time. The NCRP's views concerning radiation protection were first introduced in a report written in 1949 (published in 1954 as Report Number 17) in which the council took the position that any radiation exposure may carry some risk. At that time, the NCRP recommended that radiation exposure levels be kept at a level "as low as practicable" below the recommended maximum permissible dose equivalent (MPD). Since 1949, the council has periodically published its philosophy on this subject, with the last report, Number 39, appearing in 1971.

In addition to reviewing the content of past NRCP reports, this booklet also outlines the similarities and differences found in reports of other agencies, specifically the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) and the National Academy of Sciences Advisory Committee on the Biological Effects of Ionizing Radiations.

The booklet also contains two appendices that list current NCRP and ICRP dose limits. The dose limits for each differ widely: for instance, the NCRP skin dose limit is 15 rems in any one year, while the ICRP skin dose limit is 30 rems in a year. Although both appendices are quite detailed, the NRCP list of current dose limits seems to be more complete.

This is a well-written informative booklet. Every nuclear medicine technologist could learn from it.

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NMT AV Reviews

NUCLEAR IMAGING INSTRUMENTATION, PARTS I AND II

C. Craig Harris, M.S., Westbury, N.Y., Nuclear Associates, Inc., 1974, $135.00 each, (2 × 2 color slides, cassette tape).

This audiovisual program begins with a discussion of rectilinear and camera imaging concepts, a review of the radionuclides used for imaging and their characteristics, and an in-depth description of imaging instrumentation, including the rectilinear scanner, Anger camera, and the System 70 camera.

Via a flow chart approach, the imaging process from patient to diagnosis is then covered. Various aspects of the process are discussed separately, such as collimators, sensitivity and resolution, scintillation counting, sodium iodide crystals, energy selective counting, photomultiplier tubes, imaging parameters, and film response. This discussion is followed by a review of quality control procedures for cameras and scanners.

The slides have been professionally prepared and are colorful and explicit. However, the graphics in slide 70 may be somewhat confusing. Although the information conveyed in this slide is accurate, the viewer may have to dwell on it longer than is possible in order to grasp its message, due to the way in which it is set up.

The audio portion is clear and easy to follow. The quality of the tape is excellent. However, it does proceed rather rapidly and the various concepts are presented at a rate that is not conducive to a comfortable learning pace.

The various concepts are well presented and accurate. However, since so many different concepts are presented, none are covered in any great depth. The viewer is required to have prior understanding of nuclear physics and instrumentation in order to be able to follow the subject matter at the pace and depth at which it is presented.

This program is a very good overall review of imaging instrumentation and is recommended as such. It is not recommended to be used as an initial teaching aid.

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RADIONUCLIDE ANGIOGRAPHY

Leonard Freeman, M.D., and M. Donald Blaufox, M.D., Ph.D., Westbury, N.Y., Nuclear Associates, Inc., 1973, $135.00 (2 × 2 color slides, cassette tape).

This audiovisual program, consisting of 85 slides, is divided into two parts. The first 42 slides covering the rationale of radionuclide angiography and bolus injection techniques present the how and why of radionuclide angiography, including physical characteristics of ^{99}Tc, radiation exposure to the patient and technologist, and instrumentation used. Several diagrams illustrate clearly the technique used for bolus injections. The last 43 slides are devoted to clinical applications of radionuclide angiography. This series surveys a variety of studies (brain, heart, kidney, blood vessels, etc.) in which radionuclide angiography may be utilized.

The technical quality of this program is excellent. Information presented in diagrammatic fashion is enhanced by the use of color on these slides. The cases chosen to illustrate the various uses for radionuclide angiography are optimal. The accompanying cassette tape has a "beep" tone that enables the viewer to correlate the slides and the tape without difficulty.

This audiovisual program is intended to acquaint the viewer with the capabilities of radionuclide angiography. As a result it is a survey of several topics with no one topic treated at length. Accordingly, it has little use for students as a study aid and would be best utilized as part of an introduction to nuclear medicine techniques.

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