



AMERICAN
BOARD OF
RADIOLOGY

Oral Examination Categories Pre-2014

Radiation Protection and Patient Safety

Time, distance and shielding; workload, use and occupancy factors; shielding design for primary, scattered, and leakage radiation; barrier calculation; report preparation; air concentrations of radioactivity; department design; radiation standards and units; radiation protection principles; radiation regulations and requirements; responsibilities of the radiation protection office; radiation surveys in diagnostic radiology, nuclear medicine, and radiation therapy; characteristics of survey equipment; evaluation of radiation hazards; personnel monitoring; and related subjects.

Patient-Related Measurements

Calculation of dose from photon and particle beams and radionuclide sources; radiotherapy treatment planning; physical factors affecting dose (e.g., beam intensity, field size, depth, thickness, filtration, half-life, screens, grids, concentration, etc.); special techniques and devices (e.g., rotational therapy, stereotactic radiosurgery; IMRT; wedge filters, infusion techniques, grids, tomography, CT, ultrasound, computers and their applications, etc.); preparation of applicators; low-dose-rate (LDR) and high-dose-rate (HDR) brachytherapy; in vivo and in-phantom dose measurements; and related subjects.

Image Acquisition, Processing and Display

Principles of and techniques for image acquisition; image formation; digital imaging; computer-based image reconstruction; methods for image display; image analysis; image processing, image enhancement, fusion and segmentation; image artifacts; modulation transfer function; signal-to-noise ratio; informatics; picture archiving and communication systems; and related subjects.

Calibration, Quality Control and Quality Assurance

Characteristics and use of calibration equipment; measurements of radiation quantity and quality; calibration and evaluation of ionizing and nonionizing radiation sources and installations; calibration and evaluation of measuring, recording, and imaging devices; acceptance testing, commissioning, quality control and quality assurance; and related subjects.

Equipment

Principles and properties of radiation generating equipment; radiation sources; radiation receptors; radiation therapy equipment; diagnostic radiological equipment; nuclear medicine equipment; ultrasound equipment; nuclear magnetic resonance equipment; and related subjects.