Initial Certification
Nuclear Medical Physics (NMP)
Part 2 Content Guide

PLEASE NOTE: List of Constants and Physical Values for Use on the Part 2 Physics Exams

The ABR provides candidates with a list of constants, physical values, and related information, which can be found on this page. While the list includes many constants and physical values, the ABR does not warrant the list as a compilation of all constants and physical values needed on the examinations. Candidates should review the list carefully before their examinations to familiarize themselves with the contents and list organization.

Content Guide

The content of all ABR exams is determined by a panel of experts who select the items based on a content guide that the ABR publishes. The content guides are assembled using guidance from medical physics organizations. The content guides are general documents, and individual exam items may not appear to be exactly congruent with the content listed in the guide. In addition, since there is only a limited number of items on any exam, selected items will only be a sample from the larger domain of the content guide.

1. **Radiation Protection, Safety, Professionalism and Ethics**
    - Internal dosimetry
    - Dose terminology and Definitions
    - Dose Regulations
    - Expected doses
    - Fetal Dosimetry
    - CT dosimetry
    - Occupational safety
    - Safety for the patient, family and public

- Time, distance shielding
- Shielding calculations
- Professionalism and Ethics

2. **PET & Hybrid**
   - Basic PET scanner Instrumentation
   - Radionuclide production and characteristics
   - PET Detectors
   - Acquisition
   - Reconstruction
   - Corrections (Attenuation, random, scatter)
   - Quantitative PET
   - PET/CT
   - QC procedures
   - Acceptance/Annual testing

3. **Single photon imaging systems including scintillation cameras, solid state cameras and hybrids**
   - Basic system instrumentation
   - Radionuclide production and characteristics
   - Intrinsic Specifications
   - Extrinsic Specifications
   - Collimation
   - Digital Systems
   - Dynamic imaging
   - SPECT
   - SPECT/CT
   - QC procedures
   - Acceptance/Annual testing

4. **Radiation measurements including dose calibrators, well counters, survey meters, thyroid probes**
   - Scintillation detector system
   - Solid State Detectors
   - Well Counters and Probes
   - Survey Meters
   - Dose Calibrator
   - Dead-time
   - Efficiency
   - Operation of SCA, MCA
   - Statistical distributions
   - Statistical Tests
   - Propagation of Errors
   - Digital Image Statistics
   - Chi-Square Tests

- Minimum detectable activity
- Quantitative measurements including calibration
- Quality Control

5. **Clinical Procedures**
   - Cardiac
   - Pulmonary
   - Tumor Imaging
   - Bone Imaging
   - Brain
   - Endocrine (Thyroid)
   - Lymphatic
   - Radionuclide therapy
   - Brachytherapy
   - Other