

<<核医学与PET>>

图书基本信息

书名：<<核医学与PET>>

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## 内容概要

An invaluable reference tool for students and practitioners alike, this expert textbook presents fundamental concepts in nuclear medicine such as math, statistics, and physics, as well as current information on instrumentation, computer and laboratory sciences, radiochemistry, and radiopharmacology. After general discussions of radiation safety and patient care, each body system is covered in a separate chapter that covers relevant anatomy and physiology followed by details of the performance and interpretation of various procedures for diagnosing specific problems. Up-to-date, clinically relevant material reflects all content covered in the nuclear medicine technology program curriculum. In-depth procedure discussions relevant to the clinical practice of nuclear medicine prepare readers to perform procedures with confidence. Accessible writing style and approach to basic science subjects addresses fundamentals first, both throughout the book and within each chapter, and topics build toward more complex concepts. Learning tools such as chapter outlines, chapter objectives, suggested readings, and a Math and Statistics review help readers identify important points within each chapter.

Editors and contributors from a variety of academic and clinical settings provide a broad philosophic and geographic perspective, making this an authoritative and comprehensive resource. A comprehensive glossary defines specialized terminology and important concepts. Updated material keeps students informed about current practices for Tc-99m ECD imaging, scintillation cameras, quality control, radiation safety regulations, and new radiopharmaceuticals. New chapters include expanded coverage of the fundamentals of instrumentation and radiochemistry applications, as well as clinical applications of PET to oncology. A new chapter on SPECT (single photon emission computed tomography) covers: instrumentation; image acquisition, filtering, reconstruction and display; image properties; and physics and artifacts. 100 new illustrations accompany the 3 new chapters, and images and equipment photos have been updated throughout the book where needed. A Mathematics and Statistics review added to the first chapter features multiple choice questions with answers in the back of the book.

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## 书籍目录

Chapter 1: Mathematics and Statistics, Fundamentals, Practical Applications, Statistics, Review Questions,  
 Chapter 2: Physics of Nuclear Medicine, Electromagnetic Radiation, Atoms and Molecules, Atomic Structure, Mass-Energy Relationship, Nuclear Notation and Nuclear Families, Decay Processes Schematics of Radioactive Decay, Radioactivity Units, Interactions, Photons, Extranuclear Energy Release, Attenuation and Transmission of Photons, Chapter 3: Instrumentation, Radiation Detection, Anger Scintillation Cameras, Solid State Cameras, Emission Computed Tomography, Quality Control, Maximizing Image Quality, Chapter 4: Computer Science, History, Data Representation, Hardware, Software, Image Acquisition, Image Display and Processing, Emission Computed Tomography (ECT) Imaging, Clinical Applications, Chapter 5: Laboratory Science, Glassware and Instrumentation, Elements and Compounds, Laws of Constant Composition and Multiple Proportion, Gram Atomic Weights, Gram Molecular Weights, and the Mole Concept, Empirical and Molecular Formulas, Solutions and Colloids, Chemical Reactions and Equations, Acids and Bases, Equilibria and Equilibrium Constant, The pH Concept, Buffer Solutions, Organic Compounds, Chapter 6: Radiochemistry and Radiopharmacology, Production of Radionuclides, Technetium Radiopharmaceuticals, Gallium and Indium Radiopharmaceuticals, Thallium Chloride, Iodinated Radiopharmaceuticals PET Radiopharmaceuticals, Therapeutic Radiopharmaceuticals, Radiopharmaceutical Quality Assurance, Chapter 7: Radiation Safety in Nuclear Medicine, Units, Effective Dose Equivalent, ..... Chapter 8: Patient Care and Quality Improvement Chapter 9: Principles of Single Photon Emission Computed Tomography (SPECT) Imaging Chapter 10: Fundamentals of Molecular Imaging With PET, Chapter 11: Clinical PET Oncology Chapter 12: Central Nervous System Chapter 13: Endocrine System Chapter 14: Respiratory System Chapter 15: Cardiovascular System Chapter 16: Gastrointestinal System Chapter 17: Genitourinary System Chapter 18: Skeletal System Chapter 19: Hematopoietic System Chapter 20: Inflammatory Process and Tumor Imaging Chapter 21 : Oediatric Imaging

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