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Radionuclide and Hybrid Bone Imaging

- Presents up-to-date and comprehensive information on the use of bone scans and hybrid imaging techniques in a variety of settings, including benign disease, primary bone tumors, and metastases
- Discusses the merits of different radiopharmaceuticals
- Compares bone scintigraphy with conventional radiological methods
- Includes sections on the basic science and pediatric bone scintigraphy

The accurate identification of pathology in the skeleton is an extremely important goal, and the great strength of the radionuclide bone scan is its ability to identify functional change before structural change occurs. Over the years, the indications for bone scan have evolved to include benign disorders as well as malignancies. Further striking developments include the emergence of PET and of new tracers that offer enhanced capabilities, such as 18F-fluoride. The most dramatic advance, however, has been the development of hybrid imaging systems that combine the strengths of different modalities.

This book, written by authors with national and international reputations in the field, covers all aspects of radionuclide and hybrid bone imaging. Introductory sections present the basic science and consider the current status and limitations of conventional radiological techniques. The underlying principles of PET-CT and SPECT-CT are carefully explained, and the value of different PET and SPECT tracers, assessed. The role of single- and dual-modality approaches in the imaging of benign bone diseases and malignancies is then discussed in detail in a series of well-illustrated chapters. The pathologies addressed include metabolic bone disease, arthritis, bone and joint infections, primary bone and soft tissue tumors, and metastases from breast and prostate cancer. A further section considers the role of bone scintigraphy in the pediatric patient, and the closing chapters focus on miscellaneous subjects, including bone densitometry and radionuclide targeted therapy.