

Contents

1 Principles, Design, and Operation of Multi-slice CT	1
Marc Kachelriess	
2 PET Imaging Basics	21
Timothy G. Turkington	
3 Design and Operation of Combined PET-CT Scanners	29
David W. Townsend	
4 CT-Based Attenuation Correction for PET	39
Jonathan P.J. Carney	
5 Technical Artifacts in PET-CT Imaging	47
Thomas Beyer	
6 Quantitation of PET Data in Clinical Practice	61
Michael M. Graham	
7 Patient Preparation and Management	67
Nancy M. Swanston and Paul Shreve	
8 Radiation Protection of Technologists and Ancillary Personnel	83
Robert E. Reiman	
9 Application of CT Contrast Agents in PET-CT Imaging	91
Gerald Antoch, Patrick Veit, Andreas Bockisch, and Hilmar Kuehl	
10 Performance, Interpretation, and Reporting of PET-CT Scans for Body Oncology Imaging	103
Paul Shreve and Harry Agress Jr.	
11 Pediatric Management and Preparation in PET-CT	117
Joseph J. Junewick and Paul Shreve	
12 PET-CT in Radiation Treatment Planning	121
Jacqueline Brunetti	
13 Probability and the Principles of Diagnostic Certainty in Medical Imaging	131
Steven Kymes and James W. Fletcher	

14 Principles of Medical Imaging in the Diagnosis and Staging of the Cancer Patient	147
Anthony F. Shields	
15 Principles of PET in Cancer Treatment for the Assessment of Chemotherapy and Radiotherapy Response and for Radiotherapy Treatment Planning	157
Natalie Charnley, Terry Jones, and Pat Price	
16 PET-CT Imaging of Lung Cancer	163
Vikram Krishnasetty and Suzanne L. Aquino	
17 PET-CT of Esophageal Cancer	181
Gary J.R. Cook	
18 PET-CT of Head and Neck Cancers.....	193
Barton F. Branstetter IV, Sanjay Paidisetty, Todd M. Blodgett, and Carolyn Cidis Meltzer	
19 PET-CT of Thyroid Cancer.....	209
Trond Velde Bogsrud, Val J. Lowe, and Ian D. Hay	
20 PET-CT in Breast Cancer	227
Mehmet S. Erturk, Rick Tetrault, and Annick D. Van den Abbeele	
21 PET-CT in Colorectal Carcinoma	245
Michael Blake, James Slattery, Dushyant Sahani, and Mannudeep Kalra	
22 PET-CT Imaging of Lymphoma	265
Lale Kostakoglu	
23 PET-CT Imaging in Multiple Myeloma, Solitary Plasmacytoma, and Related Plasma Cell Dyscrasias	293
Ronald C. Walker, Marisa H. Miceli, and Laurie Jones-Jackson	
24 PET-CT of Melanoma.....	313
Chuong Bui and Paul Shreve	
25 PET-CT of Ovarian Cancer	329
Carlos A. Buchpiguel	
26 PET-CT of Cervical and Uterine Cancer.....	337
Yat Yin Yau	
27 PET-CT of Testicular Malignancies	357
Mark Tann and Paul Shreve	
28 PET-CT in Pediatric Malignancies.....	369
Joseph J. Junewick and Paul Shreve	
29 PET-CT of Renal Cell Carcinoma	387
Todd M. Blodgett and Sanjay Paidisetty	
30 PET-CT in Soft Tissue Malignancies.....	397
Edwin L. Palmer, James A. Scott, and Thomas F. DeLaney	

31 PET-CT of Pancreatic Cancer	407
Todd M. Blodgett, Sanjay Paidisetty, and Paul Shreve	
32 PET-CT of Bone Metastases.....	419
James A. Scott and Edwin L. Palmer	
Index.....	433

Clinical PET-CT in Radiology

Integrated Imaging in Oncology

Shreve, P.; Townsend, D.W. (Eds.)

2011, XIV, 437 p. 690 illus., 149 illus. in color.,

Hardcover

ISBN: 978-0-387-48900-1