
Practical Guides in Radiation Oncology

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The series *Practical Guides in Radiation Oncology* is designed to assist radiation oncology residents and practicing radiation oncologists in the application of current techniques in radiation oncology and day-to-day management in clinical practice, i.e., treatment planning. Individual volumes offer clear guidance on contouring in different cancers and present treatment recommendations, including with regard to advanced options such as intensity-modulated radiation therapy (IMRT) and stereotactic body radiation therapy (SBRT). Each volume addresses one particular area of practice and is edited by experts with an outstanding international reputation. Readers will find the series to be an ideal source of up-to-date information on when to apply the various available technologies and how to perform safe treatment planning.

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Target Volume Delineation for Pediatric Cancers

 Springer

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Preface

Optimizing the therapeutic ratio is critical in pediatric radiation oncology to effectively treat benign and malignant diseases while simultaneously decreasing dose to normal structures to reduce the risk of acute and late effects. Being able to achieve therapeutic improvements in radiation therapy is reliant on accurate target volume definition to precisely delineate tumor and critical normal tissues. Accurate target volume delineation has become ever more important as advanced treatment technologies such as proton therapy and image-guided conformal therapies become standard therapeutic options.

It is necessary to understand the specific and unique clinical considerations for multiple pediatric tumors in order to design radiotherapy fields that neither over-treat nor under-treat the disease entity. The clinical target volume (CTV) must be delineated on cross-sectional axial imaging in addition to normal tissues. With certain radiation treatment approaches such as proton therapy, the precise contouring of disease compared to normal structures is essential.

We hope that this text will serve as a comprehensive contouring guide for radiation planning for pediatric diseases in the modern era. Each chapter illustrates different case scenarios to capture the spectrum and diversity that we experience in the pediatrics field. In this age of advanced technologies, we feel that a consistent approach to target delineation is a critical element to provide the optimum treatment for our patients.

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Contents

1 Central Nervous System Normal Structures	1
Barbara Fullerton and Shannon M. MacDonald	
2 Noncentral Nervous System Normal Structures	13
Natia Esiashvili	
3 Medulloblastoma	27
Ralph Ermoian and Steve Braunstein	
4 Ependymoma	39
Christine Hill-Kayser	
5 Pediatric Intracranial Germinomas	55
Jonathan W. Lischalk and Shannon M. MacDonald	
6 Craniopharyngioma	71
Anita Mahajan	
7 Gliomas in Children	99
Teresa Meier, Carolyn Freeman, and John Breneman	
8 Rhabdomyosarcoma	125
Matthew Ladra, Karen J. Marcus, and Torunn Yock	
9 Ewing Sarcoma and Osteosarcoma	145
Matthew D. Hall, Nadia Laack, and Daniel J. Indelicato	
10 Non-rhabdomyosarcoma Soft Tissue Sarcomas	161
Lynn Million	
11 Pediatric Hodgkin Lymphoma	193
Zachary D. Guss, Qinyu Chen, Bradford Hoppe, and Stephanie A. Terezakis	
12 Wilms and Other Pediatric Renal Tumors	205
Arnold C. Paulino and John Kalapurakal	
13 Neuroblastoma	221
Bret Adams, Daphne Haas-Kogan, and Joseph Panoff	

14 Ocular and Orbital Malignancies 241
John T. Lucas Jr. and Jeffrey C. Buchsbaum

15 Pediatric Head and Neck Malignancies 251
Michelle Gentile and Bree Eaton