MDCT Physics: The Basics: Technology, Image Quality and Radiation Dose

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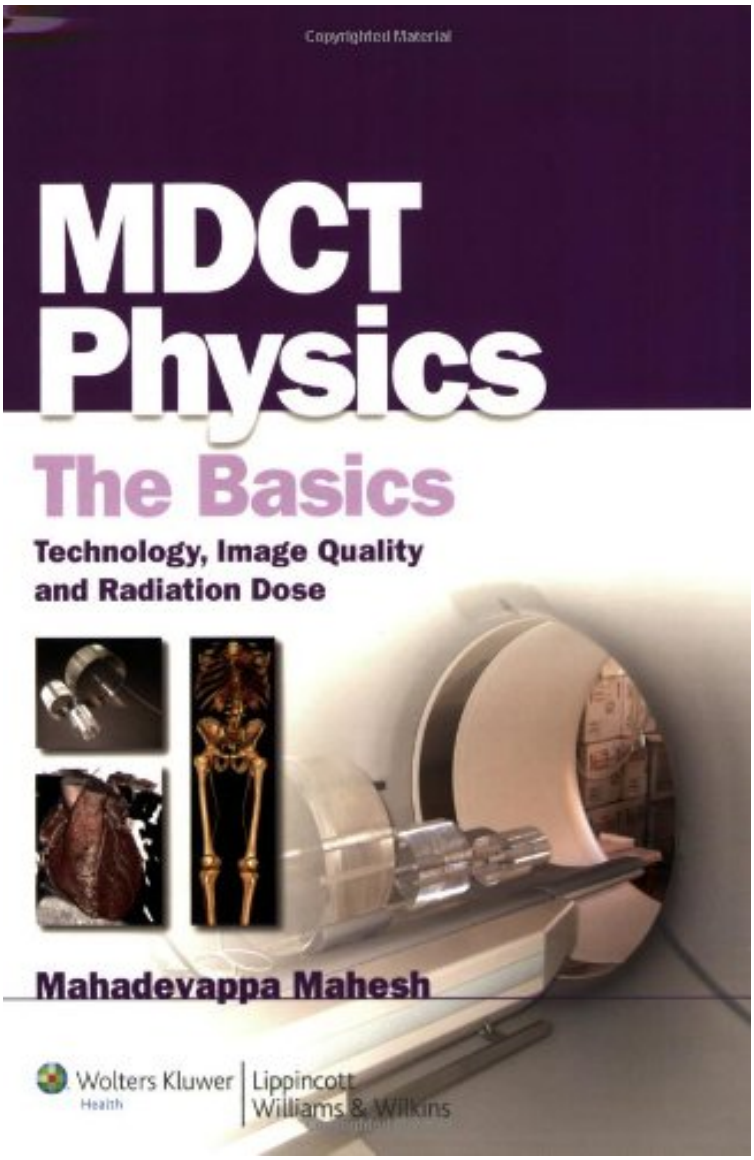

#1626529 in Books Lippincott Williams Wilkins 2009-06-06Original language:EnglishPDF # 1 9.90 x .30 x 7.00l, 1.00 #File Name: 078176811X208 pages | File size: 17.Mb

Mahadevappa Mahesh MS PhD : MDCT Physics: The Basics: Technology, Image Quality and Radiation Dose before purchasing it in order to gage whether or not it would be worth my time, and all praised MDCT Physics: The Basics: Technology, Image Quality and Radiation Dose:

0 of 0 people found the following review helpful. quick overviewBy MKGood stater book for people just starting to

study ct scanners in general... need other book for more detail. Happy with purchase.

Written by the chief physicist at Johns Hopkins University Hospital, this easy-to-read short textbook explains the physics behind multi-detector CT technology, particularly newer, more complex technology. The focus is on principles of physics, effects of scan parameters on image quality, and optimum radiation dosage. The book includes numerous key points summaries and questions to assist in exam preparation.

Hopkins Medicine, 01-OCT-09 -- "As Mahesh notes in his preface to MDCT Physics: The Basics, clinicians and other CT users 'have often complained about the lack of a single textbook that can explain, in simple terms,' how these amazing machines work and the issues involved in employing them. Mahesh, a 15-year Hopkins veteran who now is chief physicist in the Russell H. Morgan Department of Radiology and Radiological Science, fills that gap with a text that is clearly written, concise (196 pages), and beautifully illustrated with more than 150 photos and diagrams, many in color."-Hopkins Medicine Am. Assoc. Phys. Med., 01-APR-10, Walter Huda, PhD -- Description/Purpose Many books on CT include a short description of the technology added onto a comprehensive CT imaging textbook. At the other extreme, books on CT can provide a detailed and mathematical description of CT physics with a focus on image reconstruction. The stated purpose of this book is to "fill the gap" by providing an easy-toread yet comprehensive book on multidetector CT (MDCT), especially radiation dose and image quality. Audience The author states that the primary audiences for this book are radiologists and radiology residents, as well as those working in cardiac imaging. Additional readers include technologists and medical physicists, as well as other physicians and scientists who might interact with MDCT imaging, but who do not specialize in this specific imaging mode. Contents/Features The first four chapters deal with the nuts and bolts of CT scanners. These chapters include a detailed description of conventional and spiral CT, as well as technologies that are no longer found in many imaging departments such as electron beam CT or four-slice CT. One chapter focuses on the important topic of image quality and one chapter provides a detailed outline on cardiac imaging, which is an area that has seen substantial growth in research and clinical applications in recent years. Three chapters address radiation dose and radiation protection issues. One interesting and novel feature is a separate chapter entitled Strategies to Reduce Radiation Dose in CT, which has been written by representatives of the four major manufacturers of medical imaging devices. The topic of radiation dose reduction is a timely one and will be of considerable interest to those who specialize in CT imaging. The final chapters include topics on hybrid imaging (PET-CT and SPECTCT), as well as more advanced applications including dual source CT, 320- slice MDCT, CT fluoroscopy, and CT perfusion, as well as the author's thoughts on the future of CT imaging. Assessment/Comparison The author's hope is that this book will be used by medical professionals who use or work with MDCT. The book is concise and readable and will therefore appeal to nonspecialists. This book achieves the stated goal of providing a basic understanding of MDCT and is a useful resource for clinicians and scientists working with MDCT. Scientists and clinicians who would like to better understand how this imaging modality works, and appreciate issues of both image quality and radiation doses, will benefit from material presented in this publication. ed by Walter Huda, Ph.D. Walter Huda is a Professor of Radiology at the Medical University of South Carolina. He works in medical radiation dosimetry and diagnostic imaging, with a special interest in CT as well as imaging pediatric patients.