

# Preface

It is my pleasure to present the “fundamentals” version of *Atlas of Virtual Colonoscopy*, which was first published in 2003 in two parts. The first, which is reprinted here, consists of nine expertly authored chapters that serve as an educational module and reference for a rapid review of critical areas of study. Scientific advances in research, particularly the publication of clinical trials and the gradual acceptance of virtual colonoscopy in nonresearch settings, have created a demand for this information. Yet only limited educational venues are available for those seeking courses, tutorials, and published study material. The atlas from which these chapters are derived, remains the only text of its kind on the topic, and in spite of advances since initial publication, its content remains largely up to date and relevant. This is due in part to several factors. The original text was updated shortly prior to submission, and Springer did an outstanding production job of publishing the book quickly. The authorship of the atlas is broad based, with top international researchers in the field as contributors. Because the book is written by individuals involved in cutting-edge research, it includes information that has only subsequently appeared in the peer-reviewed literature. For example, computer-aided diagnosis is well covered in the atlas, even though commercialization of this software is not expected until next year. Thus, several topics are ahead of their time, thus keeping the contents relevant.

The nine chapters reprinted here represent the contribution of 16 experts in the field, and their subject matter helps readers understand current discussions about CT colonography. For instance, the chapter on accuracy is a useful reference when evaluating the recent publication of several clinical trials, particularly the screening trial by P.J. Pickhardt and coworkers, which stimulated strong interest in CTC by the general radiology community and the public. Some advances in CTC examination technique with automated insufflation, stool tagging, and electronic subtraction are also discussed in the book and have progressed further since then. Volume CT scanners capable of scanning 40 to 64 slices in one second are now available. Additional anticipated developments, including the commercialization of computer-aided detection of polyps and advances in CTC reading software promise to make CTC more accurate and easier to interpret in the near future. Insurance companies are gradually considering reimbursement, and CPT

codes for virtual colonoscopy now exist. There is always a discrepancy between the examination performance and interpretation methods used in the peer-reviewed literature versus those that result when the exam is performed with state-of-the-art equipment and training. I anticipate that well-trained radiologists will outperform the accuracy reported in many clinical trials. This is in contrast to the normative assumption that experts in a research setting may achieve a higher sensitivity and positive predictive value in comparison to a busy clinical practice. I am confident that continued strides will be made in the immediate future to promote this technology in the marketplace and to improve the compliance of the public with colon cancer screening recommendations.

The gastroenterology community has largely accepted the fact that virtual colonoscopy, if interpreted by an experienced radiologist, is the best alternative to optical colonoscopy and can be used for patients who have an incomplete optical colonoscopy, usually on the same day. Many experts opine that screening virtual colonoscopy for average-risk patients will free-up a busy colonoscopy schedule to do more high-risk patients who are more likely to have an abnormal exam. Some gastroenterologists are even trying to learn how to interpret virtual colonoscopy themselves, leaving the extracolonic findings to the radiologist. I think that the emerging data on flat lesions in particular, covered by Dr. Jeff Fidler in Part II of the original atlas, underscore the importance of a careful 2D interpretation of images, even if a primary 3D read is used to search for polyps. This is one of many reasons why I believe that virtual colonoscopy should be the domain of the radiologist. Both radiologists and nonradiologists will find this “fundamentals” version an excellent way to learn about the issues and controversies.

Lastly, I would like to thank all the contributors, researchers, support staff and publication personnel who helped advance this technology and who contributed to the original version of the atlas as listed in the foreword. In the preparation of Part I of the atlas reprinted in the “fundamentals,” I thank Marc Levine, MD, for reviewing the manuscript. I thank my publisher, Rob Albano and his staff at Springer, who worked with me on this project from concept to completion. Lastly and most dearly, I thank my wife Yisraela, our daughter Eliana, and my children Toby, Yitzchak, and Laya and to my wife’s children Rachel, Shlomie and Yoni Marshall, for giving me the time and support needed to complete this task. The dedication page of the atlas as reprinted shows a dedication to my family and in memory of my father Albert Dachman, zl’. However, my mother Esther Deborah Dachman, zl’, recently passed away and I rededicate this issue in her memory as well.

I hope that this issue of the atlas is as well received as was the initial version. I hope the audience of radiologists, gastroenterologists, practitioners, researchers, and residents find this atlas a valuable addition to the literature and enjoyable to read.

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