
Foreword: *Radiology* Select Volume 5—Radiation Dose and Dose Reduction

Dear *Radiology* Select Reader:

When we chose Radiation Dose and Dose Reduction as the topic for the fifth volume in the *Radiology* Select series, we were very excited about offering a compilation of articles on a theme of utmost importance to all radiologists and health care providers. The concept of the right radiation dose for the right study, at the right time, is central to optimizing care for those patients who require imaging that uses ionizing radiation. Radiation Dose and Dose Reduction are topics that have stimulated a large amount of research and have engendered a great deal of public interest, as well. Industry, our professional organizations, and government regulatory agencies all have a vital interest in this topic.

We chose the team of Denis Tack, MD, PhD, and Cynthia McCollough, PhD, to be the guest editors of this volume to combine their expertise in clinical aspects of radiation dose management and medical physics. Dr Tack received his PhD degree from the Université Libre de Bruxelles, Belgium, in 2005. His thesis was entitled *Radiation Dose Reduction in Adult CT*. Dr McCollough is a professor of medical physics and biomedical engineering at the Mayo Clinic in Rochester, Minnesota, where she has been a member of the faculty since she received her PhD in medical physics from the University of Wisconsin–Madison in 1991. Each of our guest editors has interests that revolve around techniques to reduce radiation dose from CT without compromising diagnostic performance.

Our guest editors had the difficult tasks of reviewing original research and reviews recently published in *Radiology* and selecting those that are included in this compilation. They have compiled an overview of research in this area that spans challenges associated with the safe use of ionizing radiation in medical imaging to quantifying radiation exposure, patient dose, and risk from medical imaging, as well as topics of dose optimization and dose management in selected subspecialty imaging. We are limited to the number of articles we can include to achieve a compilation of reasonable size, so the final list of articles is, of necessity, subjective. The contents of this volume reflect a somewhat personal view of which are the key articles and are not the result of a quantitative determination. Furthermore, it must be recognized that *Radiology* has published many more fine articles on the subject area than can be condensed into this 35-article volume. Many excellent and clinically important articles, therefore, had to be passed over and not included.

We believe that this collection of key articles will be a valuable resource for all radiologists and for a variety of medical practitioners who use ionizing radiation for diagnostic imaging or request such examinations in their patients, since it behooves all of us—even those of us who practice only imaging without

ionizing radiation, such as ultrasonography and magnetic resonance imaging—to have an understanding of the benefits and risks of imaging-related ionizing radiation.

Continuing medical education (CME), in the form of both CME credits and self-assessment CME (SA-CME) credits, is an important aspect of clinical practice in radiology. Recent American Board of Radiology diplomates, in addition to needing CME, also need SA-CME for recertification. We believe that *Radiology* Select offers a perfect vehicle to provide up-to-date SA-CME activities for our readers and will help them better understand how research evolves and translates into clinical practice. Therefore, Drs Tack and McCollough identified key articles for SA-CME. The articles' corresponding authors were then contacted and asked to supply questions for CME and SA-CME activities. In this volume, readers can obtain up to 13 CME/SA-CME credits on radiation dose and dose reduction.

The online era provides multimedia opportunities for publications. We exploit this capability by providing audio and video conversations with authors to explore their views on the effect of their work and the work of others in the field. These conversations also allow experts to share their thoughts on future developments and the impact of their work on these. In this volume of *Radiology* Select, Drs Tack and McCollough have conversations with several groups of authors to discuss the pertinent topics in dose and dose reduction.

In keeping with the trend of increasing reliance on electronic publishing, we are offering *Radiology* Select in three formats: HTML on the Internet, a digital tablet edition, and print on demand. Print on demand is a printed compilation of the articles for those who prefer reading hard copy. The tablet edition is an electronic multimedia document that combines the electronic articles with audio and video; the articles have been formatted to allow viewing on tablet computers such as the Apple iPad and the numerous Android-powered devices. Images can be resized and compared in this format. We also offer an HTML version for viewing with a Web browser. Individual PDFs can also be downloaded, and readers can listen to and view the audio and video conversations. The CME and SA-CME activities are available only through the online version.

We thank Drs Tack and McCollough for reviewing and selecting the articles collected in this volume. We are especially grateful to the authors of the articles, without whom *Radiology* Select would not be possible.

Sincerely,

Deborah Levine, MD, Series Editor, *Radiology* Select
Herbert Y. Kressel, MD, Editor, *Radiology*



Video

Online Educational Edition and Tablet Edition of *Radiology* Select include a video with series editor Deborah Levine.