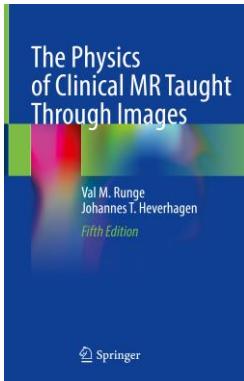


## Book shelf

# The Physics of Clinical MR Taught Through Images, fifth edition

Runge, Heverhagen

### REVIEW INFO



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Springer

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£71.99 / ebook £32.39\*

\*Prices correct as at  
September 13, 2023,  
please call (01371)  
812960 for current  
prices.

### REVIEW

*Book reviewed by Dr Martin Graves, professor of MR physics, University of Cambridge.*

This is the fifth edition of this book by editor-in-chief of *Investigative Radiology* Val Runge and Johannes Heverhagen, both radiologists at the University of Bern, Switzerland. The book is now published by Springer and, in addition to softback and hardback, is available in PDF format.

The authors acknowledge that the book was created with the support of an educational grant from Siemens Healthineers and like the previous edition primarily uses terminology and examples from Siemens MRI systems. There is an appendix where the authors endeavour to match many of the clinical image examples to the acronyms used by Siemens, Philips and GE HealthCare, although not for any other MRI vendor. The unique selling point of this book is the extensive use of clinical images to illustrate the physical principles being discussed.

The fifth edition is now divided into nine sections. While the vast majority of the original eight sections have not been updated, the text and images still serve their purpose. There have been minor updates to chapters 53 and 54 regarding contrast agents, mainly introducing high relaxivity agents, ie gadopiclesol, and a brief discussion of some molecular contrast agents that are still under development.

The main update is the addition of a new section on recent innovations that includes a further 20 chapters, each primarily covered in the book's standard one to two pages. Many of these are updates to earlier chapters, eg 'Simultaneous multislice (SMS): an update' and 'Compressed sensing: an update', although there are new chapters covering, for example, 'MR fingerprinting', 'Advanced low-field MR' and 'Deep learning: for imaging reconstruction'.

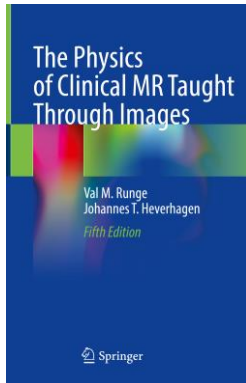
*review continues ...*

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### REVIEW

... review continued

The book remains a comprehensive text, with good quality image reproduction. With the addition of the new section the content is reasonably up to date. As I wrote in my review of the fourth edition, it is challenging to describe the complexity of MRI physics topics in one or two pages, so it is a little disappointing that there are still no standard references via which the reader could follow up further, although some figures are reprinted from articles in *Investigative Radiology* and have appropriate citations.

The PDF version has bookmarks to each of the chapters, but the index does not have hyperlinks to the relevant page(s).

As I stated previously, this book will not teach you the physics of MRI, but it is a good reference book if you want to see clinical examples of a particular concept.

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