
Magnetic Resonance Tomography

M. F. Reiser, W. Semmler, and H. Hricak, eds.

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Interest in MRI has been increasing since its inception because of its ability to demonstrate not only anatomy but also function and metabolites. The technical development of MRI has also progressed remarkably and seems to be continuing at an ever-increasing pace. There has been an explosion in the number of clinical applications of MRI, including MR spectroscopy, functional MRI, radiation therapy planning, and interventional MRI. MRI has become the method of choice for early diagnosis and for planning and following up treatment.

This book, which has been one of the most popular textbooks on MRI in German-speaking parts of the world, covers all aspects of MRI in a single volume and has been updated every 5 y since the first publication in 1992 to meet the rapid advancement of technology and clinical applications. The goal behind publishing this fourth edition in English instead of German was to produce a volume geared to the interests of an international community. This attractively designed, clearly illustrated hardbound textbook not only summarizes well-established facts about MR tomography for practical application but also discusses new procedures.

This book has 17 chapters written by a multitude of international experts who are well known in their specific fields and whose work has contributed to progress in the development of MRI techniques and clinical standards, as well as cutting-edge applications. The authors tried to apply the same structure to each chapter wherever possible so that the reader can look in the same place for the examination technique, normal and pathologic findings, and the effectiveness of the method. The authors also tried to define the importance of MRI in the diagnosis of various diseases in comparison or combination with other methods. The book starts with a short introduction, and chapter 2 deals with the basic science of MRI and MR spectroscopy. Chapters 3

through 9 are on various organ systems. Chapter 10 discusses MRI safety, techniques, and findings for the fetal body; and chapters 11 and 12 cover whole-body MRI and interventional MRI, respectively. Chapter 13 deals with functional MRI, chapter 14 discusses computer-aided 3-dimensional radiation planning using MRI, and chapter 15 reviews clinical MR spectroscopy. Chapter 16 is an overview of molecular imaging, and chapter 17 reviews systems biology and nanotechnology. The chapters on spectroscopy, molecular imaging, and nanotechnology are relatively easy to read, with many useful color images and tables. Those chapters give glimpses into the future and outline the potential role of MRI in molecular medicine.

The illustrations are excellent, and the references have been updated. There is a 30-page glossary based in part on the definitions given in the American College of Radiology glossary of MRI terms. There is also a 13-page list of abbreviations. This is useful for understanding many new MRI techniques and methods. The subject index is optimal.

This book provides a comprehensive overview of both basic sciences and practical applications, as well as guidance, and is intended for a wide audience, including practicing imaging specialists and basic scientists. The clear explanation of the basic sciences should be helpful as a daily companion and adviser to medical students and trainees in imaging fields. *Magnetic Resonance Tomography* should be placed in medical and imaging libraries as an in-depth and wide-ranging reference on MRI techniques and clinical applications.

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