

as survival outcome. As survival improves, it becomes essential to establish other outcome parameters to assess the potential complications of treatment. With this information, refinement of treatment paradigms can be attempted when necessary. These authors discuss the changes in radiotherapy techniques that have already occurred to address the recognized risk to cognitive function. More studies addressing QOL issues are underway, and more are needed.

This monograph provides a well-balanced concise review of the current state of diagnosis and treatment issues for patients with pineal region tumors. The authors provide us the benefits of their vast experience with a relatively uncommon, yet extremely difficult and deadly disease. This book is highly readable and will be of interest to neurosurgeons, neuro-oncologists and radiation oncologists.

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references provided at the ends of each of the chapters are appropriate and current. As well, suggested readings are also provided at the end of each chapter.

In the last chapter the authors discuss the future of fMRI, with regard to practical and ethical issues, discussing confidentiality, and interacting with the public. The Glossary at the end is alphabetically arranged, and is a good summary of acronyms and words used in MRI, as well as various words seen in electrophysiology and statistics. The Index is well-organized and comprehensive.

In summary, this second edition is an excellent, comprehensive introductory text for the clinician or the student interested in fMRI. It would benefit individuals performing clinical fMRI, as well as researchers in fMRI. The authors have, in my opinion, achieved their goals with this book, and I highly recommend it.

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FUNCTIONAL MAGNETIC RESONANCE IMAGING. SECOND EDITION. 2009. By Scott A. Huettel, Allen W. Song, Gregory McCarthy. Published by Sinauer Associates Inc. USA. 542 pages. C\$100 approx.

This reviewer did not read the first edition of this book, but the book has been extensively rewritten according to web discussions. The aims of the second edition, according to the preface are "to provide a broad, comprehensive and rigorous introduction to fMRI research". The book is written by researchers working at Duke and Yale Universities. They acknowledge the need to incorporate foundations in physics and biology of fMRI, and not to sacrifice accuracy.

The reader is introduced progressively to how fMRI came about, then exposed to basic and more advanced MRI physics in the first chapters, including scanner design and technology. These chapters are followed by information about data processing and statistical methods used to obtain images using BOLD imaging to assess for brain activation. In addition to the book itself, there is a website linked to the book, which has study questions and web links. As well, during the course of the book, multiple questions are asked of the reader, and there are highlighted areas, which make it interesting to read, not just a purely didactic text. All the important topics in fMRI are covered, as well as its limitations, artifacts and potential sources of error at all stages of image acquisition and processing. The issue of noise and signal and the complex interrelationship between them, in particular in reference to field strength, are extremely well dealt with. As well, the use of spatial filters to improve signal to noise is also well covered. The authors are successful in explaining the many difficult concepts of fMRI.

The authors reference well known fMRI experiments in the course of the book. Experimental design is also well-described. The authors also provide readers with all the well-known statistical processing software packages known, though do not go into detail in the advantages or disadvantages of one over the other. Illustrations, schematic, graphic and actual images are of good quality, produced in both colour and black and white. The