

# [PDF] The Physics & Technology Of Radiation Therapy

Patrick N. McDermott, Colin G. Orton - pdf download free book

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#### Books Details:

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#### Description:

This book is the outgrowth of a course taught to residents in radiation oncology at Wayne State University, at the suggestion of residents who saw a need for a technically accurate text set at the correct mathematical level. It is intended to be a book to learn from, not a comprehensive compendium. It is written for members of the radiation therapy community such as radiation therapy technologists, dosimetrists, and radiation oncologists who may have taken college physics several years previously but still need to know the basic physics of radiation therapy. For graduate students in medical physics, it will serve as a review of the basics. The material is written to be

relevant to clinical practice, without covering specifics in treatment planning, and also with a close eye on board certification requirements.

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This is the 2nd and revised edition of a successful textbook on the physics of radiation therapy<sup>1</sup> that covers basic principles and new technologies in the field and how they apply to the clinical practice. The revised textbook is better organized, easier to navigate and read than its predecessor. It is designed as a parallel resource or an alternative to well-established books in the field of radiotherapy physics. Although there is a demand for radiation therapy in large animal cases, there are certain limitations of external beam radiation therapy for horses that restrict treatment options. Currently, there are only five veterinary teaching hospitals in the United States where external beam radiation therapy can be performed on horses and other large animals. Simply defined, radiation therapy is the application of specific kinds of ionizing radiation with the intent to treat a disease, which is usually but not always cancer. This differs substantially from using radiation to gather diagnostic information, as in the case of medical X-rays, CT scans, and nuclear medicine. All ionizing radiation has the potential to cause cellular damage, but in diagnostic radiology, doses are kept as low as possible to protect against cellular damage while still getting the diagnostic information needed. To understand how radiation therapy works, it's important to know a few simple facts about cancer. Cancer is not one disease, of course, but all cancers share a trait: uncontrolled cell growth.