1. Record Nr. UNINA9910457508603321

Titolo	Optical detection of cancer [[electronic resource] /] / editor, Arlen Meyers
Pubbl/distr/stampa	Hackensack, N.J., : World Scientific, 2012
ISBN	981-4295-41-8
Descrizione fisica	1 online resource (206 p.)
Altri autori (Persone)	MeyersArlen
Disciplina	616.99/4075 616.99407545
Soggetti	Cancer - Diagnosis Diagnostic imaging Optics Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Preface; Contents; Chapter 1 The Optical Detection of Cancer: An Introduction Toby Steele and Arlen Meyers; Part I: An Introduction to Optical Detection Technology; Introduction; Optical detection technology applications; Techniques for the optical detection of cancer; Spectroscopy; Fluorescence spectroscopy; Elastic scattering (reflectance) spectroscopy; Raman spectroscopy; Fluorescence imaging; Optical coherence tomography (OCT); Narrow-band imaging (NBI); Multimodal optical imaging; Summary; Part II: The Application of Optical Diagnostic Technology in the Upper Aerodigestive Tract IntroductionOral cavity; Pharynx, hypopharynx, and larynx; Trachea, bronchus, and lung; Esophagus; Conclusion; References; Part I: An Introduction to Optical Detection Technology; Part II: The Application of Optical Diagnostic Technology in the Upper Aerodigestive Tract; Oral cavity; Pharynx, hypopharynx, and larynx; Trachea, bronchus, and lung; Esophagus; Chapter 2 Optical Coherence Tomography in Oral Cancer Shahareh Sabet and Petra Wilder-Smith; Introduction; Optical coherence tomography; Existing diagnostic tools for oral cancer detection; 1. Visual examination and biopsy 2. Oral brush cytology3. Vital staining; 4. Chemiluminensce: ViziLite; 5.

Spectroscopy and autofluorescence; 6. In vivo confocal imaging; 7. Photosensitizers; OCT Use in the Detection of Oral Cancer; Future Directions; Conclusion; References; Chapter 3 Optical Coherence Tomography in Laryngeal Cancer Marcel Kraft and Christoph Arens; Introduction; Working Principle; Technique in the Larynx; OCT Findings; Grading of Dysplasia; Complications and Difficulties; Research Results; Comparison with the Literature; Potential Applications; Conclusions; Acknowledgements; Dedication; References
Chapter 4 Fluorescence Imaging of the Upper Aerodigestive Tract Christian Stephan Betz, Andreas Leunig and Christoph ArensThe Importance of Early Detection; Biophysical Basics; Autofluorescence imaging; Enhanced fluorescence imaging (EFI); Equipment and Examination; Fluorescence Imaging - General Statements; Autofluorescence imaging (AFI); Enhanced fluorescence imaging (EFI); Fluorescence Imaging - Results in Oral and Oropharyngeal Lesions; Autofluorescence imaging (AFI); Enhanced fluorescence imaging (EFI); Fluorescence Imaging - Results in Laryngeal Lesions; Autofluorescence imaging (AFI)
Enhanced fluorescence imaging (EFI)Discussion; General points; Comparison of fluorescence Imaging to other novel screening techniques; Comparison of different fluorescence imaging methods and systems; Conclusion; References; Chapter 5 Photodynamic Diagnosis and Photodynamic Therapy Techniques Zheng Huang; Historical Background; Photosensitizers; Photodynamic Diagnosis Techniques; PDD mechanisms; PDD application; Photodynamic Therapy Techniques; PDT mechanisms; Biological effect of PDT; Direct cytotoxicity; Vascular effect; Immune responses; PDT light applicator and delivery; PDT dosimetry
Modes of PDT application

Sommario/riassunto

Significant progress in engineering has allowed the production of devices that can optically detect, differentiate and treat surface or near-surface cancers. The ability to differentiate cancerous from non-cancerous tissue in vitro using light represents a potentially significant advance in patient care, eliminating needless repeat procedures. With the help of advanced optical technologies, clinicians are able to identify cancers earlier, determine surgical margins at the time of surgery, and monitor treatment results without using expensive and insensitive imaging. This volume describes the s