dissection photos and illustrations to guide you through all the key structures you'll need to learn in your gross anatomy course. This medical textbook helps you master essential surface, gross, and radiologic anatomy concepts through high-quality photos, digital enhancements, and concise text introductions throughout. Get a clear understanding of surface, gross, and radiologic anatomy with a resource that's great for use before, during, and after lab work, in preparation for examinations, and later on as a primer for clinical work. Learn as intuitively as possible with large, full-page photos for effortless comprehension. No more confusion and peering at small, closely cropped pictures! Easily distinguish highlighted structures from the background in each dissection with the aid of digitally color-enhanced images. See structures the way they present in the anatomy lab with specially commissioned dissections, all done using freshly dissected cadavers prepared using low-alcohol fixative. Bridge the gap between gross anatomy and clinical practice with clinical correlations throughout. Master anatomy efficiently with one text covering all you need to know, from surface to radiologic anatomy, that's ideal for shortened anatomy courses. Review key structures quickly thanks to detailed dissection headings and unique icon navigation. Access the full text and self assessment questions at studentconsult.com. Get a clear understanding of the human body through surface, gross and radiologic anatomy all in one place. Biomaterials in Endodontics offers an up-to-date overview of endodontic biomaterials and their applications in regenerative medicine and tissue engineering. This book details the key biomaterials used in clinical endodontics and the benefits and challenges of using these materials, from root canal obturation materials to alloys for endodontic files and hand instruments. Chapters also offer a unique insight into the
regenerative applications of endodontic biomaterials, such as the use of stem cells and growth factors for bone regeneration. Biomaterials in Endodontics is a useful resource for researchers working in biomedical engineering, regenerative medicine, and materials science with an interest in dentistry and bone regeneration. This book is also a helpful guide for endodontists, dentists, dental scientists, and clinicians with an interest in biomaterials for endodontics. Details the latest innovations in materials used for endodontic procedures Offers a unique insight into regenerative applications of endodontic biomaterials Appeals to an interdisciplinary readership, combining materials science, regenerative medicine, and biomedical engineering approachesThis book is a guide to proven, current clinical endodontic practice. It is designed, primarily, with the undergraduate readership in mind but is also suitable for anyone pursuing specialist training, including extended skills in endodontics, and general dental practitioners undertaking CPD, or wishing to keep up-to-date. The seventh edition is available with an online question bank containing MCQs and Clinical Cases. Practical approach to the subject, taking the reader through every step of endodontic practice from its scientific basis to patient assessment and through to clinical techniques Helpful pedagogic features – including Learning Outcomes and Summary Boxes – help reinforce learning International experts and contributors help ensure good coverage and currency of information Explores areas of debate when they exist to reflect differing approaches to treatment intervention Explains the potential impact of systemic conditions and disorders, as well as medications, on endodontic treatment planning and management Discusses the diagnosis of orofacial pain and the appropriate use of antibiotics and analgesics Explores the maintenance of pulp vitality and the prevention of apical
periodontitis in the context of operative dentistry Provides an overview of instruments and devices used during endodontic treatment Describes the fundamental principles of canal filling using gutta-percha, as well as the use of alternative materials, and newer root filling techniques Discusses the management of dental trauma with emphasis on accurate diagnosis, timely and appropriate treatment, and follow-up Explores the interface between endodontic-periodontal disease in the context of diagnosis, treatment and prognostic assessment Discusses common challenges such as inadequate pain control and problems with preparation and filling of the root canal system Written at a level which is ideal for dental students, general dental practitioners and those pursuing specialist training or seeking to keep up-to-date Comes with access to an online question bank containing a wide range of MCQs and Clinical Cases to help reinforce learning! Richly illustrated with over 80 colour artworks – many created by the Gray’s Anatomy illustration team – and 350 photographs, many of which are previously unpublished Explores advances in our understanding of the role of microorganisms in the pathogenesis of pulpal and periradicular diseases and the role of host defence response against root canal infection Explores the use of newer imaging techniques such as three-dimensional tomography in determining pulp space anatomy and in treatment planning Explains recent advances in material technology, molecular biology and regenerative medicine in the management of deep caries and maintenance of pulp vitality Explores the effective use of existing and newer chemomechanical preparation techniques and intracanal medication for thorough root canal system decontamination Explores advances in the techniques available for restoring endodontically treated teeth This lavishly illustrated, practical guide to endodontic treatment
covers the latest developments in instrumentation and filling techniques. Ideal for all dental practitioners involved in endodontic therapy [root canal treatment], this new edition has been fully updated throughout and now includes a new author team from the Eastman Dental Institute. Practical approach to the subject takes the reader through every step of the clinical procedures from patient assessment to specific problem solving. More than 1500 superb illustrations, including colour coded algorithms, present clinical, diagnostic and practical information in an easy-to-follow manner. Offers sensible ‘best practice’ routes through often conflicting approaches to treatment. A full chapter on radiography emphasises its importance in both diagnosis and treatment. Includes a chapter on the avoidance of litigation. Written at a level which ensures a wide appeal to the general dental practitioner and those commencing specialist training. Includes discussion of the 3D imaging of root canal systems using microCT. Discusses the use of NiTi instruments, both hand and rotary, which are used by an increasing proportion of dentists. Learning outcomes stated at the start of each chapter help the readers plan their study. This latest edition continues to focus on those areas in endodontics that present the most difficulty in successful diagnosis and treatment. Key topics such as locating and negotiating fine and calcified canals, canal cleaning and shaping, root canal obturation, nonsurgical root canal retreatment, and management of endodontic emergencies are addressed in a systematic, problem-solving manner that stresses prevention of problems in treatment, identification of problems already present or occurring during the course of treatment, and management of such problems once they are recognized. This book describes the latest minimally invasive approaches in endodontics and explains the principles that guide them. The advantages and
limitations of these approaches are critically analyzed with the intention of defining new endodontic gold standards. The trend toward the use of more conservative procedures within endodontics reflects the wider adoption of minimally invasive dentistry in general and is being fostered by the introduction of new materials, devices, instruments, and techniques as well as the use of magnification and advanced three-dimensional diagnostic imaging technologies. In this book, readers will find clear explanation of these advances and their impacts. Minimally invasive access to the root canal system is described, and detailed attention is devoted to the application of novel strategies in root canal instrumentation and disinfection, root canal filling, coronal restoration, retreatment, and endodontic surgery. Minimally invasive alternatives to complete endodontic treatment, such as vital pulp therapies, and to dental extraction and implant placement, including surgical extrusion, intentional replantation, and tooth autotransplantation, are also discussed. Minimally Invasive Approaches in Endodontic Practice will be of value for endodontists at all levels of experience. This is a new edition of the now classic book which has established itself as a standard text for dental students. Practical approach to the subject, taking the reader through every step of endodontic practice from scientific basis to patient assessment and through to clinical techniques Evidence-based approach to ensure safe clinical practice More than 250 illustrations, many in full colour, presenting clinical, diagnostic and practical information in an easy-to-follow manner A logical approach to the subject by building upon a clear explanation of the underlying scientific principles Prepared by international contributors to ensure a wider appeal Written at a level which is ideal for dental student, general and vocational dental practitioners Includes new imaging techniques such as Cone
Beam Computed Tomography
A new chapter on diagnosis, integral to treatment planning, patient management and care. Recent research findings on the pathogenesis of endodontic disease and the management of persistent infection in previously treated teeth. A completely rewritten chapter on the restoration of endodontically treated teeth. Newer treatment modalities and materials such as regenerative techniques and Mineral Trioxide Aggregate in endodontics. The use and development of NiTi instruments, both hand and rotary, which are increasingly popular for preparing root canals. Published for the first time in full colour with over 185 new images!

A problem-based text that presents a wide range of real cases in endodontics. Clinical Cases in Endodontics presents actual clinical cases, accompanied by academic commentary, that question and educate the reader about essential topics in endodontic therapy. It begins with sets of cases illustrating the most common diagnoses and the steps involved in preparing a treatment plan. Subsequent chapters continue in this style, presenting exemplary cases as the basis of discussing various treatment options, including nonsurgical root canal treatment, re-treatment, periapical surgery, internal and external resorption, emergencies and trauma, and treating incompletely developed apices. The progression from common to increasingly challenging clinical cases enables readers to build their skills, aiding the ability to think critically and independently. The Clinical Cases series is designed to recognize the centrality of clinical cases to the profession by providing actual cases with an academic backbone. Clinical Cases in Endodontics applies both theory and practice to real-life cases in a clinically relevant format. This unique approach supports the trend in case-based and problem-based learning, thoroughly covering the full range of endodontic treatment. Unique case-based format.
supports problem-based learning. Promotes independent learning through self-assessment and critical thinking. Covers all essential topics within endodontics. Presents numerous illustrations and photographs throughout to depict the concepts described. Clinical Cases in Endodontics is an ideal resource for students mastering endodontic treatment, residents preparing for board examinations, and clinicians wanting to learn the most recent evidence-based treatment protocols.

In recent years, cone beam computed tomography (CBCT) has become much more widely available and utilised in all aspects of dentistry, including endodontics. Cone Beam Computed Tomography in Endodontics is designed to inform readers about the appropriate use of CBCT in endodontics, and enhance their clinical practice with this exciting imaging modality.

This book provides dental professionals with a clear understanding of current clinical and scientific knowledge on the various aspects of pulp treatment for both primary and young permanent teeth. Diagnostic parameters are clearly presented, along with step-by-step descriptions of clinical procedures, including indirect and direct pulp treatments, pulpotomy, and pulpectomy. The rationale for the materials used in each technique and their individual merits and disadvantages are examined in detail. In the case of pulpotomy, all the materials used since the introduction of this treatment modality are discussed (e.g., formocresol, glutaraldehyde, ferric sulfate, and MTA) and the roles of sodium hypochlorite, electrofulguration, and laser therapy are elucidated. Special attention is devoted to pulpectomy and root canal treatment, with consideration of debriding and obturation techniques, rinsing solutions, and root-filling pastes. A further individual chapter is dedicated to restorations of teeth treated with the different types of pulp therapy. The various conservative treatment modalities are also...
presented, including specific treatments for immature nonvital permanent teeth. The concluding chapter looks to the future and the potential value of stem cells in pulp therapy. The first section of this book deals with microbiologic and pathophysiologic aspects of apical periodontitis, while the second section describes the best evidence for predictable treatment and prevention of the disease. Protocols for treatment describe how to manage aligner orthodontics cases in almost every clinical situation. Full-color photos and illustrations show clinical cases. Expert, international authors represent the top fields of aligner orthodontics and provide the latest thinking and the most current procedures. Explanation of biological science makes it easier to understand the principles behind aligner treatment. Coverage of mechanical properties clearly explains the materials used in aligner orthodontics. Tips and tricks provide advice and insight into technical adjustment. Expert Consult website includes fully searchable access to the entire text. This richly illustrated book combines explanation of the scientific base underpinning vital pulp treatment with description of current and emerging trends in clinical practice. It guides the reader through modern views on pulp diagnostics, deep caries, and pulp exposure management, leading to an analysis of the biological aspects of regenerative techniques such as angiogenesis, neurogenesis, inflammation, and epigenetics. In the later chapters, practical considerations relating to bioengineering, biomaterial choice, revitalization, and stem cell-based procedures are discussed and their likely therapeutic impact considered. Aimed at dental students, postgraduates, and research-minded dental practitioners, this translational book summarizes state-of-the-art scientific knowledge on dentin–pulp interactions and regenerative endodontics, while highlighting the opportunities to incorporate recent
developments into everyday practice. Readers will also find extensive discussion of potential future developments and research avenues relating to each aspect of this exciting and rapidly developing field. This superbly illustrated book provides a comprehensive overview of guided endodontics, a technology-driven, contemporary treatment approach that represents a paradigm shift in endodontics. Guided endodontics is now the proven, safe, predictable and, clinically, the most effective method for management of calcified root canals and root-end resection surgeries. This book covers detailed step-by-step digital treatment planning and the clinical application of static guides and dynamic navigation systems for, both, surgical and non-surgical endodontic treatment. In essence, this novel technology utilizes preoperative CBCT scans and intra-oral 3D scans as well as uniquely developed special software, for virtual planning of the endodontic treatment. This book delineates 3D printing, CBCT, digital impression systems, static guide designing with different software and clinical application of static and dynamic navigation in endodontics and much more. The concluding chapter addresses the future trends in 3D guidance in endodontics, in particular, and dentistry in general. This book focuses on hydraulic calcium silicate-based materials available in clinical dentistry, used as pulp capping materials, root canal sealers, root-end fillers, or root repair materials and which offer improved properties and easier clinical application compared with the original mineral trioxide aggregate. The book introduces the current classification of bioceramic materials and explains their characterization and their physicochemical and biological properties. Thereafter, the various clinical applications of these materials are discussed in depth with reference to the evidence base. The coverage includes applications in endodontic treatments and complications, traumatic dental injuries,
management of the vital pulp in both dentitions, and regenerative endodontic procedures. Apart from presenting the latest research on hydraulic calcium silicate-based materials, Bioceramic Materials in Clinical Endodontics promotes an essential balance between basic laboratory and clinical research. It will thus be an important reference for materials science specialists, clinical researchers, and clinicians. This book describes the latest minimally invasive approaches in endodontics and explains the principles that guide them. The advantages and limitations of these approaches are critically analyzed with the intention of defining new endodontic gold standards. The trend toward the use of more conservative procedures within endodontics reflects the wider adoption of minimally invasive dentistry in general and is being fostered by the introduction of new materials, devices, instruments, and techniques as well as the use of magnification and advanced three-dimensional diagnostic imaging technologies. In this book, readers will find clear explanation of these advances and their impacts. Minimally invasive access to the root canal system is described, and detailed attention is devoted to the application of novel strategies in root canal instrumentation and disinfection, root canal filling, coronal restoration, retreatment, and endodontic surgery. Minimally invasive alternatives to complete endodontic treatment, such as vital pulp therapies, and to dental extraction and implant placement, including surgical extrusion, intentional replantation, and tooth autotransplantation, are also discussed. Minimally Invasive Approaches in Endodontic Practice will be of value for endodontists at all levels of experience. This book reviews the available information on bacterial disinfection in endodontics, with emphasis on the chemical treatment of root canals based on current understanding of the process of irrigation. It describes recent advances in knowledge of the
chemistry associated with irrigants and delivery systems, which is of vital importance given
that chemical intervention is now considered one of the most important measures in
eliminating planktonic microbes and biofilms from the infected tooth. Recommendations are
made regarding concentrations, exposure times and optimal sequences. Possible
complications related to the use of the different solutions are highlighted, with guidance on
response. In addition, clinical protocols are suggested on the basis of both clinical
experience and the results of past and ongoing research. Throughout, a practical, clinically
oriented approach is adopted that will assist the practitioner in ensuring successful
endodontic treatment. The authoritative reference that continues to present a systematic
analysis of the scientific basis of endodontology The third edition of Essential
Endodontontology: Prevention and Treatment of Apical Periodontitis has been revised and
updated to include the most recent developments in the field, maintaining its position as the
major scientific treatise of apical periodontitis. Making an often-complex subject more
digestible, the book explores the scientific basis of endodontology, adopting a systematic
analysis of the available clinical and laboratory evidence. Promoting apical periodontitis as a
disease entity, the comprehensive third edition focuses on its biology and clinical features,
enabling the reader to have a better understanding of its diagnosis, prevention and
treatment. In addition to thorough updates and full colour illustrations throughout, a new
chapter on regenerative endodontics has been added to this edition. Written with a focus on
the scientific basis of endodontology Includes a new chapter on regenerative endodontics
Presents the most current information and major developments in this fast-moving field
Provides helpful learning outcomes in each chapter Contains full colour illustrations,
enriching the text Features contributions from a noted panel of international experts, including new contributors from across the globe. Regarded as a vital companion to the pursuit of excellence in postgraduate and specialist education, Essential Endodontontology is an indispensable and accessible resource for practicing endodontists, postgraduate students of endodontology and those seeking professional certification in endodontology. This book serves as a clinical guide to help the practitioner improve endodontic treatment outcomes. It focuses on the various factors affecting the prognosis of endodontic treatments and on their impact on short-term and long-term results. The text incorporates up-to-date knowledge, techniques and treatment protocols. Each chapter has been carefully chosen to address either foundational knowledge or a select aspect of endodontic treatment. The authors analyze the knowledge accumulated from a large number of outcome studies and provide the reader with a critical appraisal indicating the strengths and weaknesses of those studies. This information is then used to make recommendations on how to predict the outcome of the intended treatment. The authors emphasize that the endodontic prognosis is a multifactorial phenomenon, underscoring how various factors, singularly and in combination, influence the treatment outcome. Readers are provided with tools to successfully assess the prognosis of the proposed treatment at the outset and to execute the planned treatment focused on optimal outcome. This title is directed primarily towards health care professionals outside of the United States. A practical, highly illustrated guide to endodontics for the primary care dentist. A practical and accessible guide to endodontics for the general dentist. Brings together new technologies available for treatment with the increasing biological understanding of endodontic disease processes. Comprehensively illustrated by the authors'
own cases. Presents key aspects of primary treatment, root canal re-treatment and periradicular surgery. The Principles of Endodontics, Third Edition is a contemporary and easy-to-read guide on why and how to carry out safe and effective endodontic treatment. Fully revised and updated, the third edition applies endodontic theory to clinical practice in a pragmatic and user-friendly way. This comprehensive guide covers the core areas of endodontics, from embryology of the dentine-pulp complex to restoration of the endodontically treated tooth. The new edition includes advice on how to solve problems that can occur during treatment, and new self-assessment questions. Fully revised, the 'How to' sections provide current step-by-step guidance. With added colour photographs and line drawings, the book reflects the latest available material and equipment, and highlights interesting clinical cases. The Principles of Endodontics, Third Edition is the essential text for undergraduates and a useful reference for recent graduates as well as established clinicians who want to refresh their knowledge to continue their professional development. This book is designed to provide the reader with a full understanding of the role of cone beam computed tomography (CBCT) in helping to solve many of the most challenging problems in endodontics. It will shorten the learning curve in application of this exciting imaging technique in a variety of contexts: difficult diagnostic cases, treatment planning, evaluation of internal tooth anatomy prior to root canal therapy, nonsurgical and surgical treatments, early detection and treatment of resorptive defects, and outcomes assessment. The ability to obtain an accurate 3D representation of a tooth and the surrounding structures by means of noninvasive CBCT imaging is changing the approach to clinical decision making in endodontics. Clinicians long accustomed to working in very small, three-dimensional spaces
are no longer constrained by the limitations of two-dimensional imaging. The challenges of mastering the new technology can, however, be daunting. The detailed guidance contained in this book will help endodontists to take full advantage of the important benefits offered by CBCT. This issue of Dental Clinics of North America focuses on Endodontics, and is edited by Dr. Mo Kang. Articles will include: Endodontic Microbiology and Pathobiology: Current State of Knowledge; Conventional Endodontic Therapies: Innovation in Biomechanics; Endodontic Retreatments: Non-surgical and Surgical Approaches; Pain Management in Endodontics: Opportunity for New Therapeutics; Pulpal Management of Immature Teeth: Use of New Biomaterials for Conservative Therapies; Innovation in Bioactive Restorative Materials; Topic in Regenerative Endodontics; Biological Molecules for the Regeneration of the Pulp-dentin Complex; Cell Homing Approach in Endodontic Regeneration; Stem Cell Therapies for Oral and Systemic Diseases; Endodontic Treatment Outcomes, and more!Endodontic Radiology, 2nd edition, is a unique reference that examines all aspects of radiographic imaging related to endodontics. Dr. Bettina Basrani and a team of prestigious international contributors build upon traditional radiographic techniques and include the latest information available on digital radiographs and cone beam computed tomography. More than an overview of equipment, the book delves into radiographic interpretation, differential diagnosis, technical difficulties and special circumstances when taking radiographs during the endodontic treatment, and how to choose the correct radiographic technique to obtain the desired images. Chapters explain general radiographic techniques; intraoral techniques; standard radiographs and interpretation; digital radiographs and their manipulation, storage, and interpretation; and CBCT principles, techniques, and clinical considerations.
Conservative dentistry and Endodontics is a comprehensive book covering the entire syllabus prescribed by Dental Council of India (DCI). It is written in easy to understand format which is enriched with numerous line diagrams, tables and highlighted text for conservative dentistry and endodontics. Contains 49 chapters under 2 sections covering basic topics, specialized materials and techniques used in Conservative dentistry and Endodontics. Includes latest topics like Minimal Interventional dentistry and Evidence based dentistry. In each chapter certain text is highlighted in boxes for better understanding. Contains high quality illustrations, tables, line diagrams and flowcharts. For self-assessment question bank is provided in the end to prepare students for various examinations.

Endodontic Materials in Clinical Practice delivers a much-needed comprehensive and clinically oriented reference to the materials used in endodontic practice. It provides complete details on the properties of the materials required for specific techniques in order to help in the selection of the appropriate materials and improve patient outcomes. Comprehensive in scope and filled with helpful illustrations, the book covers endodontic materials used from the pulp to the root-end. In addition, the text considers the location and technique for each of the materials presented. Designed to be a practical and accessible reference, the book is organised by specific clinical procedure. Presents an illustrated guide to all materials used in endodontic practice. Focuses on the clinical application for each material. Explains why specific materials are used. Includes information on how to select the correct material. Considers locations and techniques in making material decisions. Written for specialist endodontists and residents, dental material specialists, post-graduate students, general dentists, and dentistry students.
Endodontic Materials in Clinical Practice is an essential resource for selecting the right materials for specific techniques. D-Day and operation OVERLORD are often regarded as one of the most important operations of all time. The stretch of beach along the Calvados coast is world famous for the part it played in turning around World War II on the 6th of June 1944, when British, Canadian and American troops broke through Nazi defenses. Normandy is indelibly marked by the

This volume offers readers a pragmatic approach to endodontic therapy for permanent molars, based on up-to-date evidence. All chapters were written by experts in the field, and focus on preparation for treatment, vital pulp therapy, access cavity preparation, root canal shaping, outcome assessment, retreatment, apical surgery, and specific aspects of restorations for root canal-treated molars. The role of micro-CT data in visualizing canal anatomy is compared to cone beam CT, and detailed information on current clinical tools, such as irrigation adjuncts and engine-driven preparation tools is provided. Important steps are illustrated in clinical photographs and radiographs, as well as by schematic diagrams. Tables and check boxes highlight key points for special attention, and clinical pitfalls. Guiding references are provided. Performing molar endodontics is often a daunting prospect, regardless of the practice setting. This is where “Molar Endodontics” is an ideal source of guidance for practitioners. Special devices and recent innovations in apex locators and nickel-titanium instruments have, however, made procedures significantly easier and more practical for non-specialists. This book will help conscientious clinicians to master molar endodontics with well-described and established clinical methods. The new 3rd Edition of this fundamental text covers basic, need to know topics in endodontics, written at a level that's ideal for both the undergraduate dental student as well as the practitioner. The
book's unique approach includes detailed coverage of the basic sciences and separate chapters on practical topics such as referral, patient education, procedural accidents, and radiography. New chapters, expanded topics, and additional illustrations bring this Edition fully up-to-date with the fast-paced field of endodontics. Includes some new chapters, expanded topics, and additional illustrations Six page 2 colour inserts (72 pictures0 Over 300 new illustrationsRegenerative endodontics is the generation and replacement of diseased, damaged or absent pulp. This issue of Dental Clinics of North America provides a clinical view of regenerative endodontics and its aims, methods and techniques. Includes information about the British Endodontic Society. This book is a comprehensive guide to apical periodontitis in root-filled teeth that covers not only all aspects of diagnosis and management but also epidemiology, etiology, consequences, clinical decision-making, and prognosis. There is a particular focus on the available surgical and nonsurgical methods of retreatment designed to restore healthy periradical conditions. Alternatives to retreatment are also explored, including a conservative approach involving monitoring of the diseased tooth without intervention and the option of extraction and replacement with an implant or a fixed prosthesis. The goal of root canal treatment is to save the natural tooth even when tissue breakdown has resulted in pathological conditions of the pulp and periradicular tissue. However, population studies reveal that complete healing is often absent in root-filled teeth, and apical periodontitis is frequently observed in conjunction with root fillings of poor technical quality. Under these circumstances, questions arise as to how the apical periodontitis is impacting on the patient and how the condition should be tackled. Readers will find this well-illustrated book to be of great value in directing clinical practice. This book
covers the latest research in biofilm, infection, and antimicrobial strategies in reducing and treating musculoskeletal, skin, transfusion, implant-related infections, etc. Topics covered include biofilms, small colony variants, antimicrobial biomaterials (antibiotics, antimicrobial peptides, hydrogels, bioinspired interfaces, immunotherapeutic approaches, and more), antimicrobial coatings, engineering and 3D printing, antimicrobial delivery vehicles, and perspectives on clinical impacts. Antibiotic resistance, which shifts the race toward bacteria, and strategies to reduce antibiotic resistance, are also briefly touched on. Combined with its companion volume, Racing for the Surface: Pathogenesis of Implant Infection and Advanced Antimicrobial Strategies, this book bridges the gaps between infection and tissue engineering, and is an ideal book for academic researchers, clinicians, industrial engineers and scientists, governmental representatives in national laboratories, and advanced undergraduate students and post-doctoral fellows who are interested in infection, microbiology, and biomaterials and devices.

Endodontic Microbiology, Second Edition presents a comprehensive reference to the microbiology, pathogenesis, management, and healing of endodontic pathosis, emphasizing the importance of biological sciences in understanding and managing endodontic disease and its interaction with systemic health. Provides a major revision to the first book to focus on the problems related to microbes in the root canal and periapical tissues Updates current knowledge in endodontic pathosis, especially regarding next generation sequencing and microbial virulence Presents useful diagrams, images, radiographs, and annotated histological images to illustrate the concepts Emphasizes the importance of biological science in understanding and managing endodontic disease Includes contributions from the leading researchers and educators in the field
book provides a detailed update on our knowledge of dental pulp and regenerative approaches to therapy. It is divided into three parts. The pulp components are first described, covering pulp cells, extracellular matrix, vascularization and innervation as well as pulp development and aging. The second part is devoted to pulp pathology and includes descriptions of the differences between reactionary and reparative dentin, the genetic alterations leading to dentinogenesis imperfecta and dentin dysplasia, the pulp reaction to dental materials, adverse impacts of bisphenol A and the effects of fluorosis, dioxin and other toxic agents. The final part of the book focuses on pulp repair and regeneration. It includes descriptions of various in vitro and in vivo (animal) experimental approaches, definition of the pulp stem cells with special focus on the stem cell niches, discussion of the regeneration of a living pulp and information on new strategies that induce pulp mineralization. This clinically oriented book covers all aspects of the evidence-based decision making process in multidisciplinary management of the natural dentition. The book opens by clarifying the principles of evidence-based decision making and explaining how these principles should be applied in daily practice. Individual chapters then focus specifically, and in detail, on endodontic, periodontal, and prosthetic considerations, identifying aspects that need to be integrated into decision making and treatment planning. Evidence-based decision making with regard to preservation of the natural tooth versus extraction and implant placement is then discussed, and a concluding chapter examines likely future trends in dentistry and how they may affect clinical decision making. The authors include leading endodontists, periodontists, and prosthodontists. Given the multidisciplinary and comprehensive nature of the book, it will be relevant and interesting to the entire dental
This superbly illustrated book provides detailed information on the causes of instrument failure during endodontic treatment, the factors influencing the management of such cases, and the diverse management options that may be employed to resolve the problem. Readers will find clear descriptions and comparative evaluation of the available methods, techniques, and devices. Complications that may arise during the management of fractured instruments are described, and the impact of retained file fragments on the prognosis of endodontic treatment is discussed. In addition, means of preventing iatrogenic errors from occurring in the first place (the best form of management) are explained, emphasizing that the risk of instrument failure is reduced if proper guidelines are carefully considered and followed. The book will assist both endodontists and general dental practitioners in achieving an optimal outcome when confronted with the time-consuming and challenging task of dealing with a fractured instrument within the root canal – a still frequent circumstance despite the plethora of improvements in instrument design, alloy composition, and manufacturing processes.

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