

Advances In Intervertebral Disc Disease In Dogs And Cats

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The Biology of the Intervertebral Disc
Gene and Cell Delivery for Intervertebral Disc
Degeneration
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Orthopedic Clinics
Lesions of the Cervical Intervertebral Disc
Cells and Biomaterials for
Intervertebral Disc Regeneration
The Biology of the Intervertebral Disc
Arthroplasty of the Spine
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the intervertebral disc is a complex structure that separates opposing vertebrae
permits a wide range of motion and accommodates high biomechanical forces disc
degeneration leads to a loss of function and is often associated with excruciating pain
written by leading scientists and clinicians the first part of the book provides a review
of the basic biology of the disc in health and disease the second part considers
strategies to mitigate the effects of disc degeneration and discusses the possibility of
engineering replacement tissues the final section is devoted to approaches to model

normal development and elucidate the pathogenesis of degenerative disc disease using animal organ and cell culture techniques the book bridges the gap between the basic and clinical sciences the target audience includes basic scientists orthopaedists and neurologists while at the same time appealing to the needs of graduate students medical students interns and fellows

advances in intervertebral disc disease in dogs and cats defines our present knowledge of this common clinical problem compiling information related to the canine and feline intervertebral disc into a single resource as a comprehensive focused work the book is an authoritative reference for understanding and treating disc disease providing a sound scientific and clinical basis for decision making offering an objective synthesis of the current literature the book supplies guidance on the approach to a potential disc rupture surgical and medical strategies and management of the patient offering a complete understanding of intervertebral disc disease the book describes and discusses the controversies and issues surrounding this topic acknowledging the gaps in our knowledge advances in intervertebral disc disease in dogs and cats presents up to date reliable information on this common condition for veterinary surgeons neurologists and general practitioners

intervertebral disc degeneration is one of the major causes of lower back pain for which the common therapeutic interventions are not efficient a search for alternative therapies for lower back pain and intervertebral disc degeneration includes cell based therapies unfortunately intervertebral disc degeneration is avascular and thus a hostile environment for cell survival furthermore cellular characterization in intervertebral disc degeneration and particularly in the nucleus pulposus is controversial mainly due to lack of specific markers and species variability this book adds to the knowledge on cellular and molecular therapies for intervertebral disc degeneration and associated lower back pain key selling features describes the ontogeny and phenotype of intervertebral disc cells reviews the role that inflammation plays in discogenic pain highlights the types of cells that might be used as sources for treating degenerating intervertebral discs summarizes current alternative therapies explores methods for cell delivery into degenerated intervertebral discs

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first published in 1988 this book documents the role biology and structure of the intervertebral disc carefully compiled and filled with a vast repertoire of notes diagrams and references this book serves as a useful reference for students of medicine chiropractors and other practitioners in their respective fields

written by leading authorities in the field of spine care this book is a comprehensive reference for the latest techniques for managing intervertebral disc disorders affecting the lumbar spine divided into four main sections the book opens with a review of fundamental basic science concepts including epidemiology anatomy pathophysiology biology biomechanics and mechanisms of pain the second section focuses on the management of disc herniation with chapters guiding clinicians from the pathophysiology of the herniated disc to clinical presentation to various treatment strategies the final sections of the book present in depth coverage of degenerative disc disease and provide essential information for imaging and testing diagnosis patient screening treatment and rehabilitation highlights detailed coverage of the latest innovations in the field including nonsurgical treatments minimally invasive procedures biologic techniques and motion preserving procedures enables clinicians to select the appropriate treatment for each clinical situation more than 200 high quality illustrations and images demonstrate key concepts valuable discussion of safety considerations and how to avoid and manage potential complications ideal for practitioners and trainees with a focus on spinal disorders this book will be an invaluable resource for orthopaedists neurosurgeons pain specialists physiatrists neuroradiologists and researchers in these specialties

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this easy to consult guide examines the most advanced techniques in the radiological evaluation of the disc and degenerative disc disease using conventional functional dynamic and advanced imaging it provides clear information on a range of ct x ray and mri guided techniques presents all disc treatments in connection with symptomatic disc herniations evaluates conservative chemical esi steroid ozone ethanol gel injections and physical treatments coblation laser decompressors endoscopy and assesses the possibility of repairing and or regenerating the disc in the context of reversible disc degeneration like other books in the springer series new procedures in spinal interventional neuroradiology this practice oriented volume will fill a significant gap in the literature and meet the need expressed by many specialists interventional neuroradiologists and radiologists neurosurgeons and orthopedists for a topical and handy guide that specifically illustrates the currently available materials and methods

low back pain is a common disorder in the clinical treatment of the department of orthopedics lumbar intervertebral disc degeneration is a main reason for the chronic pain and the process is difficult to reverse traditional treatment methods include

conservative treatment and surgical treatment although the clinical symptoms caused by intervertebral disc degeneration can be alleviated to a certain extent these treatment methods do not solve the fundamental issues and they also produce corresponding complications the rise of tissue engineering technology and its applications in different fields have brought new ideas for the treatment of intervertebral disc degeneration this book discusses the fundamentals as well as more recent developments in stem cell therapy and tissue engineering technology and offers an alternative for treating degeneration of intervertebral discs

epidemiology of lumbar intervertebral disc degeneration structure and biology of the intervertebral disc in health and disease nutrition of the intervertebral disc the endplate and its relevance with intervertebral disc degeneration genetic risk factors in intervertebral disc degeneration biomechanics of intervertebral disc degeneration diagnostic tools and imaging methods in intervertebral disc degeneration an overview of the management of degenerative disc disease adjacent level disc disease is it really a fusion disease prosthetic total disc replacement stem cell regeneration of the intervertebral disc gene therapy for intervertebral disc degeneration tissue engineering for intervertebral disc degeneration emerging technologies for molecular therapy for intervertebral disc degeneration intervertebral disc transplantation

disorders related to the intervertebral disc ivd are common causes of morbidity and of severe life quality deterioration ivd degeneration although in many cases asymptomatic is often the origin of painful neck and back diseases in western societies ivd related pain and disability account for enormous health care costs as a result of work absenteeism and thus lost production disability benefits medical and insurance expenses although only a small percentage of patients with disc disorders finally will undergo surgery spinal surgery has been one of the fastest growing disciplines in the musculoskeletal field in recent years nevertheless current treatment options are still a matter of controversial discussion in particular they hardly can restore normal spine biomechanics and prevent degeneration of adjacent tissues while degeneration affects all areas of the ivd the most constant and noticeable changes occur in the gel like central part the nucleus pulposus np recent emphasis has therefore been put in biological ways to regenerate the np however there are a number of obstacles to overcome considering the exceptional biological and biomechanical environment of this tissue different biological approaches such as molecular gene and cell based therapies have been investigated and have shown promising results in both in vitro and in vivo studies nonetheless considerable hurdles still exist in their application for ivd regeneration in human patients the choice of the cells and the choice of the cell carrier suitable for implantation pose major challenges for research and development activities this lecture recapitulates the basics of ivd structure function and degeneration mechanisms the first part reviews the recent progress in the field of disc and stem cell based regenerative approaches in the second part most appropriate biomaterials that have been evaluated as cell or molecule carrier to cope with degenerative disc disease are outlined the potential and limitations of cell and biomaterial based treatment strategies and perspectives for

future clinical applications are discussed table of contents cell therapy for nucleus pulposus regeneration recent advances in biomaterial based tissue engineering for intervertebral disc regeneration

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joint replacement is a logical step in the treatment of severe joint pathologies with irreversible lesions resisting conservative therapy at the spinal level arthrodesis became very early the gold standard of treatment for severe intervertebral disc pathologies the next logical step was to envision functional replacement and this step was taken as early as 1956 when the first intervertebral implant was described however it took many more years and a great variety of proposed implant designs before clinical applications could be attempted

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