

## Fish Diseases And Disorders Volume 3 Viral Bacterial And Fungal Infections

Good nutrition is fundamental to the success and sustainability of the aquaculture industry in terms of economics, fish health, high quality product production and minimizing environmental pollution. This book provides a unique, complete coverage of current information on nutrient requirements, feed formulations and feeding practices of commercially important aquaculture species cultured around the world. Each chapter contains detailed feeding information on specific species and is written by an expert nutritionist on that species. The book is of interest to those working professionally in the industry, graduate level students and researchers.

Fish Diseases and Disorders comprises fully updated information essential for fish health specialists, veterinarians and zoologists. Volume 1 (2006) presents protozoan and metazoan infections and molecular approaches to parasitology. Volume 2 (2010) covers non-infectious disorders, including a new chapter on the relationship between welfare issues and disorders associated with intensive fish culture. Volume 3 (2011) provides up to date information on viral, bacterial and fungal infections, and new chapters on alphaviruses, oncogenic viruses and genomics and proteomics. All three updated volumes of the acclaimed Fish Diseases and Disorders are now available to purchase together at a special price saving 20% on the individual volume prices.

The pace of research on Autism Spectrum Disorders (ASD) has expanded exponentially in recent years. It is difficult for anyone to keep up with all developments. This book will assist the experienced and non-specialist reader to keep up with recent developments. The book opens with a focus on the evolutionary aspects of autism and then focuses on the public's attitude towards autism including the stigma issue. Then there is a focus on cortical modularity and electrophysiology followed by treatment issues including sensory, medical and community-based interventions. Finally, forensic issues are dealt with and the importance of the built environment is focused on. The book will be relevant to psychiatrists, psychologists, paediatricians, social workers, speech and language therapists, occupational therapists and care workers.

Fish is the principal source of protein for people in many parts of the world, particularly in developing countries. While most fish are caught from nature, aquaculture or fish farming is now making a significant contribution to total fish production. More intensive conditions of aquaculture often result in a higher incidence of fish diseases and disorders. As in the first edition, the focus of this second edition is on protozoan and metazoan parasites that cause disease in fish. Significant changes to this second edition include the addition of 3 new chapters and 4 of the original chapters have new authors.

The global trade of aquatic organisms for home and public aquariums, along with associated equipment and accessories, has become a multi-billion dollar industry. Aquaculture of marine ornamental species, still in its infancy, is recognized as a viable alternative to wild collection as it can supplement or replace the supply of wild caught specimens and potentially help recover natural populations through restocking. This book collects into a single work the most up-to-date information currently available on the aquaculture of marine ornamental species. It includes the contributions of more than 50 leading scientists and experts on different topics relevant for the aquaculture of the most emblematic groups of organisms traded for reef aquariums. From clownfish, to angelfish, tangs and seahorses, as well as corals, anemones, shrimps, giant clams and several other reef organisms, all issues related with the husbandry, breeding, and trade are addressed, with explanatory schemes and illustrations being used to help in understanding the most complex topics addressed. Marine Ornamental Species Aquaculture is a key reference for scientists and academics in research institutes and universities, public and private aquaria, as well as for

hobbyists. Entrepreneurs will also find this book an important resource, as the culture of marine ornamental species is analyzed from a business oriented perspective, highlighting the risks and opportunities of commercial scale aquaculture of marine ornamentals.

16 pages of colour plates to aid identification Only published text available where all relevant material is referenced together This manual enables the isolation and identification of bacteria that are found in aquatic animals (particularly fish). The emphasis is on bacteria from farmed aquatic animals (fish, molluscs and crustacea) but some attention is also given to other marine and freshwater animals such as mammals and birds, both captive (as in zoos) or wild, as well as aquarium fish.

Fish Diseases theme is a component of Encyclopedia of Food and Agricultural Sciences, Engineering and Technology Resources in the global Encyclopedia of Life Support Systems (EOLSS), which is an integrated compendium of twenty one Encyclopedias. Diseases caused by bacteria, viruses and certain parasites, have thus far been suggested as the main culprit for declining aquaculture production and are thus deemed responsible for huge losses amounting to billions of dollars annually. There are a number of fish diseases that are of utmost importance due to their debilitating effects on both cultured and marine fish, and includes Streptococcosis caused by a number of *Streptococcus* spp., Furunculosis, Vibriosis, Edwasiellosis, Mycobacteriosis, Nocardiosis, to name a few. The need to prevent and counteract the effect of these diseases is therefore of paramount importance. In recent years, we saw the increase in studies focusing on fish diseases particularly on those involved in unveiling the etiological agents of the diseases and how to properly treat or eradicate them, which often involved chemotherapy or administration of antibiotics. To lessen the use of antibiotics which arguably brings with it harmful side effects, a lot have been put into the development of effective prophylactic methods against fish diseases such as vaccines and also on finding efficient and reliable means of diagnosing the disease. The volume covers in detail the various diseases in fish and shellfish caused by bacteria and viruses. The contributing authors of each section have had extensive experience with fish diseases and have outlined what we need to know regarding a particular disease in a manner that is both easy to understand and apply. In Chapter 1, the various methods for disease diagnosis, prevention including vaccination and treatment of fish diseases are discussed. Chapter 2 includes and presents the various ways fish and shellfish protect themselves or fight off disease causing pathogens through their immune systems. Chapters 3 and 4 describe the diseases caused by bacterial pathogens in inland water (or freshwater) and marine water, respectively. These chapters include the identification of bacterial species responsible for the diseases and how to properly diagnose and treat them. Chapter 5 presents fish diseases caused by viral pathogens, their etiological agents, diagnosis and treatment.

Fish are critically important to the welfare of this planet and its occupants, the health of both wild and captive fish populations paramount to our survival. This book presents the gross pathology of the most commonly encountered diseases and syndromes of fish in an organ system-based approach. It provides an overview of the di

Clinical Guide to Fish Medicine Designed as a practical resource, Clinical Guide to Fish Medicine provides an evidence-based approach to the veterinary care of fish. This guide—written and edited by experts in the field—contains essential information on husbandry, diagnostics, and case management of bony and cartilaginous fish. This important resource: Provides clinically relevant information on topics such as anatomy, water quality, life-support systems, nutrition, behavioral training, clinical examination, clinical pathology, diagnostic imaging, necropsy techniques, anesthesia and analgesia, surgery, medical treatment, and transport Describes common presenting problems of fish, including possible differentials and practical approaches Reviews key information on non-infectious and infectious diseases of fish in a concise format that is easily accessible in a clinical setting Written for veterinarians, biologists, technicians, specialists, and students, Clinical Guide to Fish

Medicine offers a comprehensive review of veterinary medicine of fish.

This book addresses ecological and environmental issues associated with responsible and sustainable marine fisheries. It includes 22 chapters and has been developed from the Conference on Responsible Fisheries in the Marine Ecosystem held in Iceland in October 2001. Contents include: a global overview of marine capture fisheries; legal protection for marine ecosystems; dynamics of marine ecosystems; the role of man in marine ecosystems; and incorporating ecosystem considerations in fisheries management. The book has a subject index.

Cell Polarity in Development and Disease offers insights into the basic molecular mechanisms of common diseases that arise as a result of a loss of ordered organization and intrinsic polarity. Included are diseases affecting highly polarized epithelial tissues in the lung and kidney, as well as loss and gain of cell polarity in the onset and progression of cancer. This book provides a basic resource for understanding the biology of polarity, offering a starting point for those thinking of targeting cell polarity for translational medical research. Provides basic science understanding of cell polarity disease and development Covers diseases affecting polarized epithelial tissues in the lung and kidney, also covering the progression of cancer Includes historical context of cell polarity research for potential future breakthroughs

With collaboration of Consulting Editor, Dr. Alan Buchman, Guest Editors Drs. Gerard Mullen and Berkeley Limketkai have created a practical and current issue covering the breadth of topics in nutrition and gastrointestinal disease. Articles are specifically devoted to the following topics: Nutrition in the Management of Inflammatory Bowel Diseases; Irritable Bowel Syndrome: Food as a Friend or Foe; Treatment of Obesity: Beyond the Diet; Nutritional Management of Acute Pancreatitis; Nutritional Care in Patients with Intestinal Failure; The Life-long Role of Nutrition on the Gut Microbiome and Gastrointestinal Disease; Nutritional Strategies for Esophageal Disorders; Precision Medicine in Obesity; Gastrointestinal Food Allergies and Intolerances; All Things Gluten; Fish Oil for Inflammatory Bowel Disease: Panacea or Placebo; Nutrition Tools for the Practicing Gastroenterologist; Colorectal Cancer and Diet: Is Diet an Intervention; Non-Alcoholic Fatty Liver Disease: Nutritional Considerations; and Nutritional Considerations in the Hospital Setting. Readers will come away with current clinical information that they can employ in the clinical setting to improve outcomes in patients with gastrointestinal diseases.

Reprogramming the Genome: CRISPR-Cas-based Human Disease Therapy, presents the collation of chapters written by eminent scientists worldwide. CRISPR-Cas9 is a key technology for targeted genome editing and regulation in a number of organisms including mammalian cells. It is a rapid, simple, and cost-effective solution. CRISPR-Cas system has recently gained much scientific and public attention. This volume covers CRISPR-Cas9 based mammalian genome editing, creating disease models, cancer therapy, neurological, heredity, blood disorders, defective gene correction, stem cells therapy, epigenetic modifications, patents, ethics, biosafety and regulatory issues challenges and opportunities. This book is a key source of information on mammalian genome editing available in a single volume. This book will be useful for beginners in mammalian genome editing and also students, researchers, scientists, policymakers, clinicians and stakeholders interested in genome editing in several areas. Offers basic understanding and a clear picture of mammalian genome editing through CRISPR-Cas systems Discusses how to create mammalian disease models, stem cell modification, epigenetic modifications, correction of defective gene in blood disorders, heredity, neurological disorders and many more Discusses the application of CRISPR-Cas9 systems in basic sciences, biomedicine, molecular biology, translational sciences, neurobiology, neurology, cancer, stem cells, and many more

This important publication has been completely revised and expanded by 29 authors from the UK and USA for an international readership. It is extensively illustrated and intentionally practical with a large new section on systematic disorders that will aid disease diagnosis. This book covers all aspects of ornamental fish health including: environmental needs, the aquatic trade, fishkeeping, disease investigation, systematic

disorders, infectious and non-infectious diseases, medical and surgical therapies, relevant legislation and health & safety. Although written primarily for veterinarians, this book is an essential reference for anyone involved in professional fish health care and for those working in the ornamental fish industry and public aquaria.

The worldwide consumption of fish and fish products has continued to escalate in the last few decades as the population increases and the realization that fish is an excellent protein. This book focuses on fish diseases and disorders, which is an outcome of a tremendous volume of research conducted on parasites, especially those that cause morbidity and mortality in fish.

This important new text on climate change, and its effects on selected non-infectious disorders of fish, contains contributions by internationally recognized experts who have contributed significantly to our knowledge in this area. Comprehensive and thought provoking, the text details abiotic and biotic environmental changes associated with climate change and their effects on fish in tropical, subtropical and temperate waters. It proceeds to cover in detail developmental, physiological and metabolic disorders of fish.

"This book covers topics essential to the study of fish genetics, including qualitative and quantitative traits, crossbreeding, inbreeding, genetic drift, hybridization, selection programs, polyploidy, genomics and cloning. This fully updated second edition also addresses environmental risk, food safety and government regulation of transgenic aquatic organisms, commercial applications of fish biotechnology and future issues in fish genetics"--

Pandemics are large-scale epidemics that spread throughout the world. Virologists predict that the next pandemic could occur in the coming years, probably from some form of influenza, with potentially devastating consequences. Vaccinations, if available, and behavioral methods are vital for stemming the spread of infection. However, remarkably little attention has been devoted to the psychological factors that influence the spread of pandemic infection and the associated emotional distress and social disruption. Psychological factors are important for many reasons. They play a role in nonadherence to vaccination and hygiene programs, and play an important role in how people cope with the threat of infection and associated losses. Psychological factors are important for understanding and managing societal problems associated with pandemics, such as the spreading of excessive fear, stigmatization, and xenophobia that occur when people are threatened with infection. This book offers the first comprehensive analysis of the psychology of pandemics. It describes the psychological reactions to pandemics, including maladaptive behaviors, emotions, and defensive reactions, and reviews the psychological vulnerability factors that contribute to the spreading of disease and distress. It also considers empirically supported methods for addressing these problems, and outlines the implications for public health planning.

Fish Diseases and Disorders CABI

Salmonids have widespread economic and environmental importance. Correct identification and understanding of their diseases are therefore vital if valuable stocks are to be maintained. This volume provides a practical guide and an aid to disease recognition. This is an updated and extended version of the first publication in 1996 and contains around 400 high quality colour photomicrographs.

Vitamin D: Volume One: Biochemistry, Physiology and Diagnostics, Fourth Edition, presents the latest information from

international experts in endocrinology, bone biology and human physiology, taking readers through the basic research of vitamin D. This impressive reference presents a comprehensive review of the multifaceted vitamin D. Researchers from all areas will gain insight into how clinical observations and practices can feed back into the research cycle, thus allowing them to develop more targeted genomic and proteomic insights on the mechanisms of disease. Offers a comprehensive reference, ranging from basic bone biology, to biochemistry, to the clinical diagnostic and management implications of vitamin D Saves researchers and clinicians time in quickly accessing the very latest details on the diverse scientific and clinical aspects of Vitamin D, as opposed to searching through thousands of journal articles Targets chemistry, metabolism and circulation, mechanisms of action, mineral and bone homeostasis, human physiology, diagnosis and management, nutrition, sunlight, genetics and vitamin D deficiency Volume II of this collection presents a clinical focus on disorders, analogs, cancer; immunity, inflammation and disease and therapeutic applications

This book is a comprehensive, generously illustrated, and up-to-date reference on the virology of fishes—predominantly species of the class Osteichthyes, but including representative members of the classes Chondrichthyes and Myxini. It covers some thirty years since the first virus was isolated from a fish and describes 63 diseases and agents of viral, viruslike, or mistaken viral nature. 'The book is important for those involved in aquaculture and those wishing to learn more about the effects of non-infectious disorders and the mechanisms of response within fish and is thoroughly recommended.' Journal of Fish Diseases --

Based on twenty years of research experience, this unique, large format volume presents an up-to-date treatment of the biology, relation to the host, taxonomy and diagnostic features of protozoan parasites infecting fishes. By presenting definitions of all 151 genera, keys for the determination of all main groups of fish protozoa, copious illustrations and half-tone plates, and details on the technique of investigation, the book makes it possible to determine all protozoan parasites of fishes down to generic level. In each genus, all important pathogenic species are dealt with, special attention being paid to their pathogenic action, and these are well documented by photomicrographs. A wide range of information is given on host-parasite relations, including data on pathogenicity of separate groups and species; and a host-parasite checklist enables a quick orientation on protozoa that may be encountered in one hundred economically important fish species. In addition to the to the true protozoan phyla, an appendix lists a few organisms of uncertain position with alleged or possible relation to protozoa; altogether, 561 species are described. This book is the first of its kind and should be invaluable reading for all fish parasitologists, fisheries biologists, aquaculturists and all others interested in protozoan parasites of fishes.

This book is the first of three on fish diseases and disorders. This volume provides a comprehensive review of the major diseases of fish caused by protozoan and metazoan parasites. Written by leading international authorities, it is aimed at zoologists and veterinary parasitologists, as well as those concerned with practical aquaculture and fish farming. Two further volumes (on viral, bacterial and fungal infections, and on non-infectious disorders) are planned for publication in 1996.

Learning and Memory: A Comprehensive Reference, Second Edition is the authoritative resource for scientists and students interested in all

facets of learning and memory. This updated edition includes chapters that reflect the state-of-the-art of research in this area. Coverage of sleep and memory has been significantly expanded, while neuromodulators in memory processing, neurogenesis and epigenetics are also covered in greater detail. New chapters have been included to reflect the massive increase in research into working memory and the educational relevance of memory research. No other reference work covers so wide a territory and in so much depth. Provides the most comprehensive and authoritative resource available on the study of learning and memory and its mechanisms Incorporates the expertise of over 150 outstanding investigators in the field, providing a 'one-stop' resource of reputable information from world-leading scholars with easy cross-referencing of related articles to promote understanding and further research Includes further reading for each chapter that helps readers continue their research Includes a glossary of key terms that is helpful for users who are unfamiliar with neuroscience terminology Due to the recent rapid development of freshwater aquaculture in the Caucasus Region, many new and previously known fish diseases have appeared. One of the most prominent features of the region's aquaculture is that it is mostly based on the rearing of cyprinids, mainly the common carp (*Cyprinus carpio*), as well as a few other predatory fish species. As a result, this book focuses on the diseases that affect these and other important warmwater fish species. Although this field guide covers the diseases of warmwater fish of Central and Eastern Europe, the Caucasus and Central Asia, it also draws upon the extensive knowledge base available for the countries of Central Europe and the former Soviet Union, as well as recent research findings from the Islamic Republic of Iran and from Turkey. The major warmwater fish species cultured in the region and their health status are discussed, and two major categories of disease are recognized: biotic and abiotic diseases. Although there are numerous biotic diseases, abiotic factors (e.g. lack of oxygen, temperature, feeding mistakes) remain the main cause of losses in aquaculture. The best practices for the field and laboratory examination of disease outbreaks are reviewed, and the importance of accurate and detailed data recording emphasized. Prevention as a key factor in avoiding the spread of disease is highlighted, and actions to prevent the spread of diseases between farms, regions, countries and continents are discussed. Possible methods for the treatment of each disease are reviewed; unfortunately, the chemicals available for use in aquaculture are now rather limited, as many of them are hazardous to both the environment and human health. Of the viral diseases discussed, spring viraemia of carp (SVC) and koi herpesvirus (KHV) pose the greatest threats to the world's carp populations. Of the bacterial diseases, ulcer disease is still the main problem in carp culture, while among the parasites, *Ichthyophthirius multifiliis*, the cause of white spot disease, is among the most important. Exotic parasites such as various *Thelohanellus* species, as well as tapeworms belonging to the genera *Bothriocephalus* and *Khawia*, are responsible for a considerable amount of damage. Some diseases of unknown aetiology are also discussed.

This new edition is a timely update on important advances in the understanding of infectious diseases of finfish. The content has been significantly updated to reflect current knowledge and the developments in the fish production industry, including the dramatic increases in production in the Asia-Pacific region. An important resource for aquaculturalists, fish health consultants and fish pathologists.

"Authors Sharon Aiken-Wisniewski, Rich Whitney, and Deborah Taub have done a great service to student affairs and to student learning and development with this fine book, *The Missing Competency: A Program Development Model for Student Affairs*. The profession owes them great appreciation for returning the foundational competency of programming to our collective attention and providing a contemporary model to implement programs of quality." --From the foreword by Susan R. Komives Program development is central to the work of student affairs professionals, yet the field has not prioritized the development of competency in this area. This theory-to-practice, sequential guide to program development fills that gap in the literature. The authors describe the elements of program planning and delivery from the inception of

the idea through the use of assessment to revise and improve the program for the future. Whether a new professional or a seasoned leader, this volume offers the reader a deeper understanding of program development. Starting with a foundational understanding of this process, the book proceeds to a step-by-step process, taking a program from an idea to a proposal with goals, objectives, budget, and timeline with tasks, and beyond planning to implementation. The book concludes with stressing the importance of assessment as the program continues to develop over time. Each chapter applies program development concepts through program examples. Finally, the authors leave readers with tools and templates to support the process.

Fish Disease: Diagnosis and Treatment, Second Edition provides thorough, yet concise descriptions of viral, bacterial, fungal, parasitic and noninfectious diseases in an exhaustive number of fish species. Now in full color with over 500 images, the book is designed as a comprehensive guide to the identification and treatment of both common and rare problems encountered during the clinical work-up. Diseases are discussed following a systems-based approach to ensure a user-friendly and practical manual for identifying problems. Fish Disease: Diagnosis and Treatment, Second Edition is the must-have reference for any aquaculturists, aquatic biologists, or fish health specialists dealing with diagnosing or treating fish diseases.

"This definitive reference work explores the effects of current and expected climate change, taking place throughout the world, on selected bacterial, viral, fungal and parasitic infectious fish diseases of economically important fish in tropical and temperate waters"--

Written and edited by world-renowned authorities, this three-volume work is, to quote a reviewer, "the definitive textbook about seizures and epilepsy". This Second Edition is thoroughly updated and gives you a complete print and multimedia package: the three-volume set plus access to an integrated content Website. More than 300 chapters cover the spectrum of biology, physiology, and clinical information, from molecular biology to public health concerns in developing countries. Included are detailed discussions of seizure types and epilepsy syndromes; relationships between physiology and clinical events; psychiatric and medical comorbidity; conditions that could be mistaken for epilepsy; and an increasing range of pharmacologic, surgical, and alternative therapies, including vagus nerve stimulation and deep brain stimulation. This edition describes many new antiepileptic drugs, major advances in surgical treatment, and state-of-the-art neuroimaging, EEG, and other technologies for diagnosis and seizure prediction. A companion Website offers instant access to the complete, fully searchable text, plus an image bank of additional figures, video footage, and annual updates to selected chapters.

This book follows on from the first volume, on protozoan and metazoan infections, of a three-volume series. It focuses largely on finfish and considers non-infectious disorder of development, growth and physiology of wild and captive species. Various sections address topics such as tumourigenesis, stress physiology and the effects of stressors on particular processes, and the effect of environmental factors (including toxic substances) on fish health. The economic implications of non-infectious disorders in intensive aquaculture are of particular importance, and a chapter is devoted specifically to this. The final chapter describes evaluation methods for the assessment of disorders at the individual, population and community level. The book is indispensable for zoologists, veterinary scientists and those concerned with fisheries and aquaculture.

Attention to viral infections and pathology previously focussed on diseases of economically important fish. In recent years, however, much new information on molecular virology and oncogenicity derives from viruses occurring in amphibians. New insights into the field of zoonosis were gained by studies of lower vertebrates serving as intermediate hosts in multiple human

infections. Certain viruses, e.g. the influenza virus or calicivirus, seem capable of bridging species lines and even the land - sea interface. Global developments in aquaculture are indicated in influenza pandemics. These proceedings present research findings on viruses of fish, amphibians and reptiles, including defence mechanisms, zoonoses, evolutionary considerations and diagnostic approaches.

Cyprinids rank as one of the most commercially important groups of freshwater fishes and are exploited for many purposes; as a human food source, especially in Europe and Asia; as sport fish; and as ornamental fish for ponds and aquaria. Certain species are also cultured as bait fish and several of the small cyprinids such as the zebra fish have become internationally accepted laboratory models for toxicology testing and molecular research. A thorough understanding of cyprinid health and diseases is fundamental to the successful management and exploitation of these fishes for freshwater fisheries, pisciculture and ornamental productions. This practical guide to disease diagnosis, prevention and control includes numerous colour plates and covers a comprehensive array of diseases - infectious and non-infectious - of cultivated and wild cyprinids.

Fish and Fish Oil in Health and Disease Prevention provides an authoritative review of the role of fish and fish oil intake in the promotion of human health. This up-to-date volume provides a complete examination of intake patterns as well as research evidence of intake in disease prevention and treatment. Readers will gain knowledge ranging from the current state of fish and fish oil intake, their health promoting effects and influences on individual response, how they influence development and health maintenance through the life cycle, and their role in disease prevention and treatment. This book is an invaluable resource for all researchers working to understand the relationship between fish and human health. It is a valuable reference for nutritionists, dietitians, and health care providers. Imparts a valuable understanding of fish intake patterns around the world and the role of fish and fish oil in human health through the lifecycle Offers an understanding of the role of fish and fish oil in disease risk reduction and treatment Presents the current status of fish intake and recommended intake levels for human health Focuses on research on unique fish and oil sources and potential problems with fish availability

Handbook of Sleep Research, Volume 30, provides a comprehensive review of the current status of the neuroscience of sleep research. It begins with an overview of the neural, hormonal and genetic mechanisms of sleep and wake regulation before outlining the various proposed functions of sleep and the role it plays in plasticity, and in learning and memory. Finally, the book discusses disorders of sleep and waking, covering both lifestyle factors that cause disrupted sleep and psychiatric and neurological conditions that contribute to disorders. Emphasizes a comparative and multidisciplinary approach to the topic of sleep Covers the neurobiology and physiology of sleep stages, mechanisms of waking, and dreaming Discusses in detail the proposed functions of sleep, from health and rest, to memory consolidation and synaptic plasticity Examines the current state of research in mammalian and non-mammalian species, ranging from primates to invertebrates

In Fragile X-Associated Tremor Ataxia Syndrome (FXTAS), the editors present information on all aspects of FXTAS, including clinical features and current supportive management, radiological, psychological, and pathological findings, genotype-phenotype

relationships, animal models and basic molecular mechanisms. Genetic counseling issues are also discussed. The book should serve as a resource for professionals in all fields regarding diagnosis, management, and counseling of patients with FXTAS and their families, as well as presenting the molecular basis for disease that may lead to the identification of new markers to predict disease risk and eventually lead to target treatments.

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