Adipose Tissue As An Organ Proceedings Of The Deuel Conference On Lipids

Adipose Tissue and Adipokines in Health and Disease-Giamila Fantuzzi 2007-11-06 This book presents a comprehensive survey of adipose tissue, its physiological functions, and its role in disease. The volume spans the entire range of adipose tissue studies, from basic anatomical and physiological research to epidemiology and clinical studies. Groundbreaking recent studies are incorporated into traditional models of adipose tissue properties. A description of the role of macrophages in obesity and metabolism in included.

Adipose Tissue as an Organ-Laurence Wilkie Kinsell 1962
The Cellular Secretome and Organ Crosstalk-Juergen Eckel 2018-06-12 The Cellular Secretome and Organ Crosstalk focuses on the release of peptides and proteins from different organs and their specific functions in metabolic regulation and cell- and organ crosstalk. The book is written for experts in the field, however, for each topic, helpful references are included. The book also includes technical sections that summarize the state-of-the-art of secretome and crosstalk analysis. This book fulfills the need for a resource that comprehensively describes the current knowledge of secretome biology in health and disease. Communication between different organs involves lipids and other small molecules and a host of proteins and peptides comprising the secretome of different organs (organokinome). More than 600 adipokines have been identified, and an increasing number of hepatokines and myokines have recently been discovered with mostly unknown physiological impact. Importantly, an aberrant signature of the organokinome may be critically underlying a variety of metabolic diseases and may determine the individual susceptibility to disease development. Summarizes our current knowledge on the secretome of different cells and tissues A Dissect auto-, para- and endocrine functions of major secreted peptides and proteins Analyzes the secretory malfunction of different cells and its impact for disease development Authored by a leader in the field, presenting a coherent view on this very complex topic.

Obesity, Type 2 Diabetes and the Adipose Organ-Saverio Cinti 2018-02-22 This richly illustrated book provides a detailed description of the gross anatomy, light microscopy, immunohistochemistry, and electron microscopy of the adipose organ, which comprises subcutaneous and visceral fat depots. Findings in mice of differing genetic backgrounds (obesity prone and resistant) and maintained in standard and various physiologic and pathologic conditions are presented. The latter conditions include chronic cold exposure, warm exposure, fasting, pregnancy-lactation, and obesity. Features of the fetal adipose organ are described in a separate chapter, and results from transgenic mice are also presented when relevant. The human adipose organ is addressed in several chapters that include magnetic resonance and fetal findings. Most of the results regarding the adipose organ anatomy in different physiologic conditions are new, and the story of pink adipocytes (white-to-pink transdifferentiation) is quite innovative. The concept of using browning of the adipose organ as a therapeutic tool for obesity must take into consideration the anatomic and morphologic aspects described here, and the study of pink adipocytes could lead to a better comprehension of breast cancer tumor biology. This book will be of interest to all scientists who deal with obesity and related disorders.

Special issue: Adipose tissue- 2000
Adipose Tissue: Which Role in Aging and Longevity?-Antonello Lorenzini 2020-09-18
Health, United States 2014-Health and Human Services Department 2015-07-27 This annual report assesses the nation's health by presenting trends and current information on selected measures of morbidity, mortality, health care utilization and access, health risk factors, prevention, health insurance, and personal health care expenditures.

Adipose Tissue and Its Role in Organ Crosstalk- 2014
Angiogenesis in Adipose Tissue-Yihai Cao 2013-09-05 Angiogenesis has recently played a critical role in regulation of adipose tissue expansion and regression. Like most other tissues in the body, adipose expansion and regression is accompanied by alteration of blood vessel density and structures. The vascular alteration plays an active role in regulation of adipose tissue size and functions. Targeting blood vessels in the adipose tissue have demonstrated to be a novel approach for possibly treatment of cancer, obesity and other metabolic diseases. This book provides the most updated information on this type research and discusses future opportunities for therapy.

The Organ-like Nature of Adipose Tissue in the Chicken-Robert Arthur Liebelt 1952
Adipose Tissue-Susanne Klaus 2001-09-01 Today we know that white and brown adipocytes share many metabolic and molecular pathways, although their physiological function, i.e., energy storage and energy dissipation, respectively, are quite opposite for WAT (white adipose tissue) and BAT (brown adipose tissue). The authors in this book provide a comprehensive volume covering the whole range of Adipose Tissue in Health and Disease-Todd Leff 2010-03-19 This timely and most comprehensive reference available on the topic covers all the different aspects vital in the fight against the global obesity epidemic. Following a look at adipose tissue development and morphology, the authors go on to examine its metabolic and endocrine functions and its role in disease. The final section deals with comparative and evolutionary aspects of the tissue. The result is an essential resource for cell and molecular biologists, physiologists, biochemists, pharmacologists, and those working in the pharmaceutical industry.

Adipose Tissue- 2019-11-06 Adipose tissue, a kind of connective tissue, plays different and significant roles in the human body. Its function includes protection against environmental factors, storage of lipids and triacylglycerol, and the process of thermogenesis. It is also involved in the secretion of highly active biomolecules such as steroid hormones, prostanoids, as well as proteins named “adipokines.” On the other hand, disturbances in functions of adipose tissue may cause several pathologies such as obesity and insulin resistance. Obesity is a worldwide health problem, whereas diabetes mellitus due to insulin resistance is defined by the World Health Organization as “a progressive worldwide epidemic.” Especially dangerous is visceral accumulation of adipose tissue. This book describes a series of up-to-date topics about physiological and pathological processes in adipose tissue.

Adipose Tissue and Inflammation-Atif B. Awad 2009-10-08 The American Obesity Association identifies obesity's link to numerous medical conditions, including hypertension, type 2 diabetes, cardiovascular disease, several cancers, and a host of inflammatory disorders. Evidence indicates that inflammation has more than a corollary relation with obesity; that in fact, obesity itself manifests a low-grade, m

Adipose Tissue as an Endocrine Organ-Christoph A. Meier 2005
Adipose Tissue- Hans Hauner 2000
Adipose Tissl Protocols-Gérard Ailhaud 2001 Adipose tissue is now recognized as a widely dispersed secretory organ that exhibits autocrine, paracrine, and endocrine properties, and plays a significant role in obesity, the most common health problem in industrialized countries. In Adipose Tissue Protocols, Gerard Ailhaud and a team of laboratory experts and clinicians describe in step-by-step detail the major techniques needed for the study of adipose tissue and cells. Drawn from both in vivo and in vitro studies, these readily reproducible methods cover a broad range of techniques, including the choice of adipose tissue depot and of morphological techniques for work on both brown adipose tissue (BAT) and white adipose tissue (WAT). Major treatment is accorded the isolation, subcellular fractionation, and transfection of low density adipocytes, as well as the metabolic aspects of nutrient uptake and key assays of nutrient and ion fluxes. Also covered are: biopsies and quantification of lipid-related mRNAs; cultures of adipose precursor cells from WAT and BAT;
measurements of adipocyte secretory products; assessment of WAT metabolism in vivo; and assays of lipid-related enzymes. Innovative and highly practical, Adipose Tissue Protocols offers endocrinologists, physiologists, cell biologists, and pharmacologists a gold-standard collection of proven methods for effective nutritional, physiological, and molecular-level research on adipose tissue."

Adipose Tissue as an Immunological Organ-2013
The Role of Adipose Tissue in Systemic Inflammation-Anna Kosicka 2014
Role of Adipose Tissue as an Endocrine Organ in Systemic Inflammation-Anna Kosicka 2014

Adipose Tissue as an Endocrine Organ-Hannah Xiaoyan Hui 2018 As one of the largest endocrine organs in the body, adipose tissue secretes a number of bioactive hormones, called adipokines. The expression and secretion of adipokines are tightly controlled and coordinated by physiological and pathophysiological conditions. In multiple physiological conditions, such as obesity, cold adaptation, exercise training, expression and secretion of adipokines are altered accordingly, which in turn modulate the metabolism of the whole body in endocrine, paracrine and autocrine manners. The varied changes in adipose tissues are pivotal mediators that aid the body to adapt to various physiological and pathological conditions, whereas almost all obesity-associated diseases are attributable to dysregulation of adipokines.

Organ-on-Chip Systems Integrating Human Adipose Tissues-Julia Rogal 2021 Adipose tissue constitutes about one fourth of a healthy adult human's body mass and is involved in a large variety of (patho-)physiological processes. Especially in the era of 'diabetes', a thorough understanding of human adipose tissue has become more important than ever. Yet, research on human adipose biology is hampered by a lack of predictive model systems. Even though many valuable insights could be gained from animal models, they often fall short of predicting human physiology. Then again, unusual characteristics of mature adipocytes, such as buoyancy, fragility, and large size, make conventional cell culture approaches challenging. In recent years, organ-on-chip (OoC) technology has emerged from a synergy of tissue engineering and microfluidics approaches. OoC systems integrate engineered tissues into physiological microenvironments supplied by a vasculature-like perfusion. Yet even though OoC technology is thriving extending to other organ systems, there has only been very little focus on adipose tissue so far. Hence, the objectives of this thesis were to design, develop and characterize adipose tissue-on-chip models. To achieve this, designs, biomaterials and fabrication approaches were developed leading to three generations of microfluidic platforms specifically tailored to the needs of human adipose tissues. Moreover, protocols and logistics for sourcing, isolating, and utilizing almost all adipose tissue cell types from one donor were established. Together, this enabled the generation of white and beige adipose tissues (WAT and BAT, respectively) on chip either by injecting mature adipose cell types (in case of WAT) or by inducing adipogenesis on chip (in case of BAT). Along the way towards a highly complex, immunocompetent autologous model integrating almost all adipose-associated cell types, a mix-and-match strategy was established allowing for a flexible combination of cellular modules to fit-for-purpose models serving a specific scientific question. Moreover, a toolbox of readout methods was compiled that enabled a comprehensive characterization of on-chip adipose tissue structure and function, demonstrating functional on-chip WAT culture times beyond one month. Case studies on compound screening and immune responses highlighted the models' suitability as tools for target identification in drug discovery or for studies on immunometabolism. All in all, the developed models hold great potential for mechanistic studies on adipose tissue biology or disease modelling in the context of obesity and diabetes, as well as for personalized or precision medicine due to its fully autologous character.

New Perspectives in Adipose Tissue-A. Cryer 2014-04-24 New Perspectives in Adipose Tissue: Structure, Function, and Development reviews the state of knowledge on adipose tissue. The book begins with discussions of the anatomy and morphology of adipose tissue. This is followed by separate chapters on the nervous control of circulation and metabolism in white adipose tissue; hormonal regulation of biosynthetic activities in white adipose tissue; the role of lipid metabolism in the development and function of brown adipose tissue; and the role played by leptin and other adipokines in white adipose tissue. Subsequent chapters cover topics such as ligand proteins and adipose tissue: brown adipose tissue thermogenesis and energy balance in animals and man; methodological approaches to the study of the adipose tissues; adipose tissue growth following lipectomy; the adipocyte precursor cell; and adipose tissue dysfunction and its consequences. In addition to being authoritative source material, the chapters presented in this book are wide in their coverage and appeal.

The Adipose Organ-Saverio Cinti 1999
Physiology and Physiopathology of Adipose Tissue-Jean-Philippe Bastard 2012-11-28 The scientific advances in the physiology and pathophisiology of adipose tissue over the last two decades have been considerable. Today, the cellular and molecular mechanisms of adipogenesis are well known. In addition, white adipose tissue is now recognized as a real endocrine organ that produces hormones such as the leptin acting to regulate food intake and energy balance in the central nervous system, a finding that has completely revolutionized the paradigm of energy homeostasis. Other adipokines have now been described and these molecules are taking on increasing importance in physiology and pathophysiology. Moreover, numerous works have shown that in obesity, but also in cases of lipodystrophy, adipose tissue was the site of a local low-grade inflammation that involves immune cells such as macrophages and certain populations of lymphocytes. This new information is an important step in the pathophysiology of both obesity and related metabolic and cardiovascular complications. Finally, it is a unique and original work focusing on adipose tissue, covering biology and pathology by investigating aspects of molecular and cellular biology, general, metabolic, genetic and genomic biochemistry.

Adipose Tissue Development-C. Levy-Marchal 2010-06-17 Nowadays, adipose tissue is not only regarded as an organ of storage related to fuel metabolism but also as an endocrine organ involved in the regulation of insulin sensitivity, lipids and energy metabolism. These proceedings cover the nervous regulation of both white and brown adipose tissue mass. Different physiological parameters such as metabolism (lipolysis and thermogenesis) and secreatory activity (leptin and other adipokines) are reviewed. The plasticity of adipose tissue (proliferation, differentiation and apoptosis) showing the presence of a neural feedback loop between adipose tissue and the brain, which plays a major role in the regulation of energy homeostasis, is discussed. Merging basic knowledge and various clinical conditions, this thorough review is of great interest to both scientists and physicians, in particular pediatricians, interested in obesity, endocrinology and nutrition.

Adipose Tissue Biology-Michael E. Symonds 2017-04-03 The past decade has seen an exponential increase in our knowledge and understanding of adipose tissue biology. This has coincided with the continued rise in obesity across all generations. Clearly despite substantial advances in research into adipose tissue this still has had limited impact on the ongoing obesity epidemic across a majority of countries in the world. This book brings together many leading experts in the field to provide an up to date and comprehensive review of the key aspects of adipose tissue. It includes chapters on evolution, development and inflammation together with a detailed review of brown and beige adipose tissue biology and their potential significance in preventing or combating obesity. These chapters are complemented by those on genetics and gender influences, together with nutrition throughout the life cycle. Ultimately the book provides an overview of the complexities of adipose tissue biology and the continuing challenge to combat obesity in the 21st century.

Neuron Organ Dose and the Influence of Adipose Tissue-Robert W. Simpkins 2002
Novel Insights into Adipose Cell Functions-Karine Clément 2010-09-14 Obesity is a disease of society and economic transition spreading at an epidemic pace throughout the world. According to the World Health Organization, obesity is defined as an increased or abnormal accumulation of body fat mass to the extent that individual’s health will be negatively affected. Overweight is thus being considered as top at risk condition in addition to diabetes. Upping the issue, the risk of developing obesity is increasing steadily. This volume provides the most up to date insights into the biology of a complex endocrine organ: the adipose tissue.
enlargement. This volume provides insights into the biology of a complex endocrine organ: the adipose tissue.

Tertiary Lymphoid Organs (TLOs): Powerhouses of Disease Immunity-Changjun Yin 2017-05-22 The immune system employs TLOs to elicit highly localized and forceful responses to unresolvable peripheral tissue inflammation. Current data indicate that TLOs are protective but they may also lead to collateral tissue injury and serve as nesting places to generate autoimmune lymphocytes. A better comprehension of these powerhouses of disease immunity will likely facilitate development to unprecedented and specific therapies to fight chronic inflammatory diseases. Obesity and Lipotoxicity-Ayse Basak Engin 2017-06-05 Due to the resultant health consequences and considerable increase in prevalence, obesity will become a major worldwide health problem. “Obesity and Lipotoxicity” is a comprehensive review of the recent researches to provide a better understanding of the lipotoxicity-related mechanisms of obesity and the potential for the development of new treatment strategies. This book overviews the biochemical pathways leading to obesity-related metabolic disorders that occur subsequent to lipotoxicity. Chapters examine the deleterious effects of nutrient excess at the molecular level including the cellular and molecular aspects of breast cancer, resistance to leptin, insulin, adiponectin, and interconnection between the circadian clock and metabolic pathways during high-fat feeding. “Lipotoxicity and Obesity” will be a useful resource for clinicians and basic scientists researchers, such as biochemists, toxicologists, immunologists, nutritionists, adult and pediatric endocrinologists, cardiologists, as well as students who are thought in this field.

Functional Ultrastructure-Margit Pavelka 2010-07-16 The period between 1950 and 1980 were the golden unique insights into how pathological processes affect years of transmission electron microscopy and produced cell organization. a plethora of new information on the structure of cells This information is vital to current work in which that was coupled to and followed by biochemical and the emphasis is on integrating approaches from functional studies. TEM was king and each micrograph proteomics, molecular biology, genetics, genomics, of a new object produced new information that led to molecular imaging and physiology and pathology to by cell insufficiency and tissue organization and their understanding in cell functions and derangements in disease, functions. The quality of data represented by the images In this current era, there is a growing tendency to cell and tissues had been perfected to a very high level substituting modern light microscopic techniques for by the great microscopists of that era including Palade, electron microscopy, because it is less technically complex but it is more readily available to researchers present, the images that we see in leading journals for This atlas reminds us that the information obtained by the most part do not reach the same technical level and electron microscopy is invaluable and has no substitute.

Multidisciplinary Approach to Obesity-Andrea Lenzi 2014-11-18 This book describes in detail the multidisciplinary management of obesity, providing readers with a thorough understanding of the rationale for a multidisciplinary approach and with the tools required to implement it effectively. The emphasis is on a translational approach, starting from basic concepts and fundamental mechanisms of the pathology and clinical morbidity. Experts in the field discuss the full range of relevant topics, including the significance of physical exercise, psychological issues, nutritional strategies, pharmacological options and bariatric surgery. Put another way, the book covers all aspects from the bench to the bedside. Physicians, scientists and postgraduate students will all find it to be invaluable in understanding the causes and optimal management of obesity, which has rapidly become a major public health problem.

Adipose Tissue as an Endocrine Organ - the Role of Omentin-1 in Cardiovascular Diseases and Bone Health-Juliane Menzel 2017 Adipose Tissue as an Endocrine Organ-Henrike Sell 2007

Metabolic Basis of Obesity-Rexford S. Ahima 2010-11-16 The obesity epidemic has generated immense interest in recent years due to the wide-ranging and significant adverse health and economic consequences that surround the problem. Much attention has been focused on behaviors that lead to obesity, in particular to over consumption of energy-dense food and to sedentary lifestyle. However, obesity is an extremely complex condition with poorly defined pathogenesis. Thanks to greatly enhanced research in the area, the discovery of pathways in the brain and peripheral organs that mediate energy homeostasis has provided a framework for understanding the biological basis of obesity. Metabolic Basis of Obesity adds an important new dimension to the growing literature on obesity by offering a comprehensive review of specifically how metabolic imbalance culminates in obesity. Developed by a team of expert authors, this important title discusses the principles of energy balance, genetics of body weight regulation, hormones and adipokines, and metabolic pathways in the brain, liver, muscle and fat, to name just several of the areas covered. The book also examines the connection between obesity and diabetes, cardiovascular disease and other complications. Current and future diagnostic and treatment strategies are also reviewed. Comprehensive and timely, Metabolic Basis of Obesity is an essential reference for understanding the burgeoning problem of obesity.

Clinical Anatomy by Systems-Richard S. Snell 2007 Included CD-ROM contains clinical notes, information on congenital anomalies, radiographic anatomy, and clinical problem-solving exercises, all of which correlate directly with the text.

Histology and Cell Biology-Douglas F. Paulson 2010-07 A complete one-stop review of the clinically important aspects of histology and cell biology–user-friendly, concise, and packed with learning aids! The ideal review for course exams and the USMLE! This popular title in the LANGE series is specifically designed to help you make the most of your study time—whether you’re studying histology and cell biology for the first time or reviewing for course exams or the USMLE. With this focused review you will be able to pinpoint your weak areas, and then improve your comprehension with learning aids especially designed to help you understand and retain even the most difficult material. You will find complete easy-to-follow coverage of all the need-to-know material: fundamental concepts, the four basic tissues types, and organs and organ systems—presented in a consistent, time-saving design. At the conclusion of the book, you will find a Diagnostic Final Exam that has been updated with longer, case-related stems that mimic the USMLE Step 1 examination. Each chapter is devoted to a specific topic and includes learning aids such as: Objectives that point out significant facts and concepts that you must know about each topic Max Yield(mt) study questions that direct you to key facts needed to master material most often covered on exams A synopsis presented in outline form that reviews all the basic histology and related cell biology covered on exams Multiple-choice questions written in a style most commonly used in medical school NEW to this Edition: Thoroughly revised Q&A Completely updated text and practice questions to reflect current knowledge Information added to each chapter regarding relevant pathology/clinical issues; possibly as a separate colored covers Text www.LangeTextbooks.com to access valuable resources and study aids. Thorough coverage you won’t find anywhere else! FUNDAMENTAL CONCEPTS: Methods of Study, The Plasma Membrane & Cytoplasm, The Nucleus & Cell Cycle, THE FOUR BASIC TISSUE TYPES: Epithelial Tissue, Connective Tissue, Adipose Tissue, Cartilage, Bone, Integrative Multiple-Choice Questions: Connective Tissues Nerve Tissue, Muscle Tissue, Integrative Multiple-Choice Questions: Basic Tissue Types, ORGANS & ORGAN SYSTEMS: Circulatory System, Peripheral Blood, Hematopoiesis, Lymphoid & Hematopoietic Tissues, Integumentary System, Glands Associated with the Digestive Tract, Integrative Multiple-Choice Questions: Digestive Tract, Respiratory System, Skin, Urinary System, Pituitary & Hypothalamus, Adrenals, Islands of Langerhans, Thyroid, Parathyroids, & Pineal Body, Male Reproductive System, Female Reproductive System, Integrative Multiple-Choice Questions: Endocrine System, Sense Organs, Diagnostic Final Examination Compendium of Histology-Anders Rehfeld 2017-09-07 This book has been designed to help medical students succeed with their histology classes, while using less time on studying the curriculum. The book can both be used on its own or as a supplement to the classical full-curriculum textbooks normally used by the students for their histology classes. Covering the same curriculum as the classical textbooks, from basic histology to the histology of specific organs, this book is formatted and organized in a much simpler and intuitive way. Almost all text is formatted in bullets or put into structured tables. This makes it quick and easy to digest, helping the student get a good overview of the curriculum. It is easy to locate specific information in the text, such as the size of cellular structures etc. Additionally, each chapter includes simplified illustrations of various histological features. The aim of the book is to be used to quickly brush up on the curriculum, e.g. before a class or an exam. Additionally, the book includes guides to distinguish between the different
histological tissues and organs that can be presented to students microscopically, e.g. during a histology spot test. This guide lists the specific characteristics of the different histological specimens and also describes how to distinguish a specimen from other similar specimens. For each histological specimen, a simplified drawing and a photomicrograph of the specimen, is presented to help the student recognize the important characteristics in the microscope. Lastly, the book contains multiple “memo boxes” in which parts of the curriculum are presented as easy-to-remember mnemonics.
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