Antioxidants And Cardiovascular Disease Developments In Cardiovascular Medicine

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Prevention of Coronary Heart Disease: Diet,

Lifestyle and Risk Factors in the Seven Countries Study Daan Kromhout 2012-12-06 In the 1940s I was struck by reports about many apparently healthy middle-aged men who dropped dead instantly from heart attacks. The causes of these sudden deaths were unknown. I was interested to discover physio-chemical characteristics of individuals with predictive value for the occurrence of these fatal heart attacks. The discovery ofpreventive variables would point ways to prevent this disease. In order to find relationships between mode of life and susceptibility to heart disease contrasting populations had to be studied. Variety - not a high degree of homogeneity in culture and habits - must be sought. After exploratory surveys in countries with supposed differences in dietary patterns, lifestyle and heart disease rates in the early 1950s, the Seven Countries Study took off in 1958. This study established relationships between risk factors and development of heart disease in middle-aged men in health examined in countries with cultures we demonstrated to contrast in diet and lifestyle. The results obtained in the Seven Countries Study from its inception till now are presented in this book entitled: "Prevention ofcoronary heart disease. Diet, lifestyle and risk factors in the Seven Countries Study. " Long ago I realized that our concern should not be restricted to the prevention of coronary heart disease but should be extended to all diseases and premature death.

Oxidative Stress in Microbial Diseases Sajal Chakraborti 2019-10-26 This book discusses recent advances in our understanding of the role of oxidants in microbial pathophysiology, providing valuable insights into the complex role of reactive oxygen species (ROS) in host-microbial interactions. The various chapters take readers through the function of ROS in infections ranging from viral to bacterial, and describe how microorganisms have developed complex strategies to not only avoid contact with phagocyte-derived oxidants, but also protect

themselves from injury when oxidants are encountered. Featuring the latest research in the field of microbial diseases, this timely book is a ready reference for scientists looking to develop new anti-microbial drugs.

Current Trends in Atherogenesis Rita Rezzani 2013-02-27 This book collects the state of the art of the antioxidants from the clinical and experimental approaches in order to bring a better understanding of the mechanisms and useful therapies for these diseases. We hope that it can indicate new "current trends" for identifying new aspects regarding this scientific problem involving not only anatomical and functional, but also clinical questions.

Saving Women's Hearts Martha Gulati 2011-02-11 Mention the term "heart disease" and most people picture an overweight, middle-aged man. Yet the reality is that heart disease is the number one killer of women in North America, accounting for a third of all deaths in women and far surpassing the prevalence of breast cancer. Cardiologist Dr. Martha Gulati and holistic pharmacist Sherry Torkos separate the facts from the many myths surrounding heart disease and offer the latest information on both the conventional medical approach and the role of natural medicine in understanding this illness. Saving Women's Hearts examines the unique gender differences for women and provides valuable insight into the screening procedures, diagnosis, treatment options, and most importantly, prevention of heart disease. Written by the leading experts in this field, this practical guide covers: How the heart works and the various types of heart disease Why heart disease is different and unique for women The known and emerging risk factors for heart disease What you need to know about tests and screening procedures Medications - the good, the bad, the ugly, the noteworthy Nature's Pharmacy - the role of vitamins and other supplements Nutritional strategies for better heart health The latest exercise guidelines for women The impact

of stress and practical tips on managing stress The role of sleep and heart health And much more...

Oxidative Stress and Chronic Degenerative Diseases Jose Antonio Morales-Gonzalez 2013-05-22 This work responds to the need to find, in a sole document, the affect of oxidative stress at different levels, as well as treatment with antioxidants to revert and diminish the damage. Oxidative Stress and Chronic Degenerative Diseases - a Role for Antioxidants is written for health professionals by researchers at diverse educative institutions (Mexico, Brazil, USA, Spain, Australia, and Slovenia). I would like to underscore that of the 19 chapters, 14 are by Mexican researchers, which demonstrates the commitment of Mexican institutions to academic life and to the prevention and treatment of chronic degenerative diseases.

Antioxidants and Cardiovascular Disease J.C. Tardif 2012-12-06 Generation of oxidants or reactive oxygen species is a natural process of human biology. Mitochondrial respiration, phagocytic activity and cyclooxygenase activation are all essential processes of life, which also generate oxidative species. In humans, chronic oxidative stress often coupled with deficiency of antioxidant defenses is associated with the aging process and can lead to the development of disorders such as cancer and arterial disease. Major cardiovascular conditions in which oxidative damage has been strongly implicated include atherosclerosis, myocardial ischemia and reperfusion, coronary restenosis and congestive heart failure. Compelling evidence points to oxidative stress as an important trigger in the complex chain of events leading to atherosclerosis. The expression of chemotactic factors and adhesion molecules is modified by oxidative stress. Exposure to superoxide ions activates the NF-kappa B regulatory complex and triggers the transcription of several atherosclerosis related genes. These events lead to the accumulation of macrophages

in the arterial wall. Macrophages avidly incorporate oxidized low-density lipoproteins (LDL) to form foam cells. The activity of matrix metalloproteinases is also regulated by oxidative stress. This activity appears to be closely coupled with smooth muscle cell activation and migration. Matrix metalloproteinases have also been implicated in the pathophysiology of plaque rupture. Antioxidant supplementation including vitamin E decreases susceptibility ofLDL to oxidation and retards the progression of atherosclerosis in animal models.

Antioxidants in Health and Disease Antonis Zampelas 2015-06-09 Antioxidant use in health promotion and disease prevention either through dietary intake or supplementation is controversial. This book reviews the latest evidence-based research in the area, principally through prospective cohort studies and randomized controlled trials. It assesses major dietary antioxidants and discusses their use in diseases such as cancer, diabetes, stroke, coronary heart disease, HIV/AIDS, and neurodegenerative and immune diseases. The use of antioxidants in health is also discussed along with common adverse effects associated with antioxidant use.

Natural Antioxidants in Human Health and Disease Balz Frei 1994-09-22 This book serves as a comprehensive overview of the current scientific knowledge on the health effects of dietary and supplemental antioxidants (such as vitamins C and E). Chapters integrate information from basic research and animal studies, epidemiologic studies, and clinical intervention trials. The popular media has taken great interest in antioxidants, with numerous articles emphasizing their role in preventing disease and the possible slowing of the aging process. These antioxidant vitamins may be important in preventing not only acute deficiency symptoms, but also chronic disorders such as heart disease and certain types of cancer. This book, therefore, is not only for scientists and doctors, but also for

health writers, journalists, and informed lay people. The text focuses on several human conditions for which there is now good scientific evidence that oxidation is an important etiological component. Specifically, antioxidants may prevent or slow down the progression of: Cancer, Cardiovascular disease, Immune system disorders, Cataracts, Neurological disorders, Degeneration due to the aging process. *Antioxidants and Cardiovascular Disease* Martial G. Bourassa 2008-11-01 Chronic oxidative stress is associated with the aging process and often leads to the development of disorders such as cancer and arterial disease. Cardiovascular conditions in which oxidation damage has been strongly implicated include atherosclerosis, myocardial ischemia and reperfusion, coronary restenosis, diabetes mellitus, and congestive heart failure. Antioxidants and Cardiovascular Disease, Second Edition covers three major topics: 1) the first seven chapters review the oxidative modifcation hypothesis and its close relationship to lipid metabolism and to the pathogenesis of atherosclerosis; 2) the next four chapters describe the different compounds, nutrients and supplements with antioxidant properties and their mechanisms of action; 3) and finallly, the last ten chapters discuss the potential benefits of antioxidants in overall cardiovascular prevention, including hypertension, diabetes mellitus, dyslipidemias, and in the treatment and prevention of specific conditions such as chronic coronary artery disease, restenosis after percutaneous coronary intervention, and chronic heart failure. Antioxidants and Cardiovascular Disease, Second Edition is written by recognized experts in the fields of atherosclerosis, heart failure and antioxidants. It should be of interest to medical students and fellows, researchers, and practicing physicians. There has been rapid progress in our knowledge in this field during the last two to three years. Thus the current reedition appears timely. For instance, this second edition captures

several recently reported and published clinical trials as welll as new information on diabetic and hypertensive cardiovascular disease.

Nitric Oxide, Part C: Biological and Antioxidant Activities Lester Packer 1999 General Description of the Volume: Nitric Oxide, recently designated "Molecule of the Year," impinges on a wide range of fields in biological research, particularly in the areas of biomedicine and cell and organismal biology, as well as in fundamental chemistry. This volume will be a valuable resource for the experienced researcher as well as for those newly entering the field. This volume continues the coverage of new and important tools for the elucidation of Nitric Oxide action initiated in Volumes 268 and 269 of Methods in Enzymology. Techniques for researching the physiology and toxicity of nitric oxide in cellular and organismal systems are highlighted. General Description of the Series: The critically acclaimed laboratory standard for more than forty years, Methods in Enzymology is one of the most highly respected publications in the field of biochemistry. Since 1955, each volume has been eagerly awaited, frequently consulted, and praised by researchers and reviewers alike. Now with more than 300 volumes (all of them still in print), the series contains much material still relevant today--truly an essential publication for researchers in all fields of life sciences. Key Features * Biological Activity * NO Donors: Nitrosothiols and Nitroxyls * Peroxynitrite * Oxidant and Antioxidant Action

Free Radicals and Diseases Rizwan Ahmad 2016-10-26 The current volume entitled, "Free Radicals and Diseases" integrates knowledge in free radical-associated diseases from the basic level to the advanced level, and from the bench side to bed side. The chapters in this book provide an extensive overview of the topic, including free radical formations and clinical interventions.

Cytochrome P450 2E1: Its Role in Disease and Drug Metabolism Aparajita Dey

2013-02-12 The book deals with various clinical aspects of cytochrome P450 2E1 (CYP2E1) which is a potent source for oxidative stress. Oxidative stress is critical for pathogenesis of diseases and CYP2E1 is a major contributor for oxidative stress. Several clinical disorders are associated with changes in regulation of CYP2E1 and the consequent abnormalities which include alcoholic liver disease, alcoholic pancreatitis, carcinogenesis, non-alcoholic fatty liver disease, non-alcoholic steatohepatitis, obesity, hepatitis C virus infection, reproductive organ toxicity, hepatocellular and cholestatic liver cirrhosis, inhibition of bone repair, cross-tolerance in smokers and people treated with nicotine, disorders of central nervous system, changes in metabolism of protoxicants in the circulatory system and susceptibility to human papillomavirus infection. Hence, CYP2E1 emerges as a new and potent player in aggravating injury and furthering disease complications.

Smoking Prevention and Cessation Mirjana Rajer 2018-12-05 Smoking was and remains one of the most important public healthcare issues. It is estimated that every year six million people die as a result of tobacco consumption. Several diseases are caused or worsened by smoking: different cancer types, heart disease, stroke, lung diseases and others. In this book we describe the different toxic effects of smoke on the human body in active and in passive smokers. It is also well known that many people who smoke wish to quit, but they rarely succeed. Smoking prevention and cessation are of utmost importance, thus we also describe different strategies and aspects of these issues. We hope that this book will help readers to understand better the effects of smoking and learn about new ideas on how to effectively help other people to stop smoking.

The Role of Antioxidants in Longevity and Age-Related Diseases Bee Ling Tan 2021-11-19 The average life expectancy has increased worldwide in the recent decades. This has presented new

challenges as old age brings the onset of diseases such as cancer, neurodegenerative disorders, cardiovascular disease, type 2 diabetes, arthritis, osteoporosis, stroke, and Alzheimer's disease. Studies and research have shown the potential preventive and therapeutic roles of antioxidants in aging and age-related diseases by inhibiting the formation or disrupting the propagation of free radicals and thus increasing healthy longevity, enhancing immune function, and decreasing oxidative stress. This has made an antioxidant rich diet of increasing importance in battling the detrimental effects of the aging process. "The Role of Antioxidants in Longevity and Age-Related Diseases" is the book that compiles research on antioxidants and their biological mechanisms that mediate age-related diseases. This book covers the major issues linked to antioxidants, aging, and age-related diseases, including changes in organ systems over the lifespan, age-related oxidative stress-induced redox imbalance, inflammaging, implications of inflammation in aging and age-related diseases, and the important role of antioxidant-rich foods in their prevention and treatment of various age-related diseases. For researchers seeking a comprehensive single source on antioxidants and their roles in aging and age-related diseases, this novel text provides an up-to-date overview.

Pathophysiology of Cardiovascular Disease Naranjan S. Dhalla 2012-12-06 Pathophysiology of Cardiovascular Disease has been divided into four sections that focus on heart dysfunction and its associated characteristics (hypertrophy, cardiomyopathy and failure); vascular dysfunction and disease; ischemic heart disease; and novel therapeutic interventions. This volume is a compendium of different approaches to understanding cardiovascular disease and identifying the proteins, pathways and processes that impact it.

Studies on Cardiovascular Disorders Heinrich Sauer 2012-11-07 The role of reactive oxygen

species (ROS) in the cardiovascular system is Jan- faced. Whereas low concentrations of ROS are involved in variety of physiological signalling events, oxidative stress resulting from deregulated overproduction of ROS and/or impaired antioxidant defences contributes to cardiovascular disease. The actions of ROS in the cardiovascular system are a fascinating topic, not only for the basic science researcher but also for the clinician who is interested in seeking new therapies for his patients suffering from cardiovascular disease. The current book provides a comprehensive overview of the molecular mechanisms and pathoph- iological settings in which chronic and detrimental oxidative stress arises within the heart and vasculature. The book also considers currently discussed strategies in avoiding chronic redox stress resulting from exposure to risk factors or various cardiovascular interventions. The series starts with an overview by Denise de Castro Fernandes, Diego Bonatto and Francisco Laurindo of redox signaling models that could underlie the dev- opment of redox-associated cardiovascular disorders. The interactions of proteins within signalling cascades with ROS and the regulation of such interactions by the anti-oxidative capacity of the cell are discussed. Rebecca Charles, Joseph Burgoyne and Philip Eaton report on redox-mediated modi cations of proteins under ph- iological and pathophysiological conditions and the variety of post-translational oxidative modi cations that explain redox sensing and signal transduction by proteins at the molecular level. ROS are generated during embryogenesis and may be involved in the proper development of the cardiovascular system.

Oxygen Radicals in the Pathophysiology of Heart Disease Pawan K. Singal 2012-12-06 Over two centuries ago, oxygen was discovered as "air vital": the component of the earth's atmosphere necessary for life. Less than five years after this discovery, it was found that oxygen was both a

life-sustaining and life threatening inhalant as it plays a role in the two extremes of the animal kingdom: life and death. In the subse quent years, we have made major strides in understanding the role of oxygen in maintaining life and volumes of information are now available on this topic. Our knowledge of the contribution of oxygen in cellular dysfunction and cell death which for the most part had lagged behind has begun to catch up. The deleterious ef fects of oxygen radicals and activated oxygen species on a variety of biological systems have now been described. Recently attention has also been focused on the toxic effects of oxygen on the cardiovascular system. The major aim of the present treatise is to offer an integrated view of the pathophysiological aspects of oxygen toxicity in the heart and blood vessels coupled with a review of therapeutic approaches (hopes?) with free radical scavengers and antioxidants. Internationally known expert investigators provide a concise and critical review on the topic of their expertise which also contains data from their own research.

The Truth About Heart Disease Mark Houston 2022-08-05 You can prevent coronary heart disease in yourself, but you need to have the knowledge of the risk factors, the presenting symptoms and take early actions with aggressive and proper diagnostic testing. Start a prevention program for your heart health with The Truth About Heart Disease. In this book, Dr. Mark Houston provides you with scientific prevention and treatment programs to reduce your risk of coronary heart disease and myocardial infarction. These programs include optimal and proper nutrition, nutritional supplements, vitamins, antioxidants, anti-inflammatory agents, minerals, exercise, weight and body fat management, and other lifestyle changes. The Truth About Heart Disease will be of great value to all health care practitioners, cardiologists, and dietitians.

Hypoxia and Anoxia Kusal Das 2018-12-12 The molecular deprivation of oxygen is manifested by

hypoxia, a deficiency of oxygen and anoxia, or the absence of oxygen supply to the tissues. This book entitled Hypoxia and Anoxia will cover a broad range of understanding on hypoxia and anoxia from molecular mechanisms to pathophysiology. Hypoxia and anoxia stimulate multiple systems through specific cell signal transduction pathways and regulate several transcriptional factors like HIF-1, REST to encode genes for VEGF, Epo, etc. This book will also highlight different types of hypoxia and anoxia along with their impact on apoptosis, cardiovascular pathophysiology, and glucose regulatory mechanisms. This book will be a ready reckoner to give a deep understanding of the oxygen-sensing environment in vivo for researchers, academicians, and clinicians throughout the world.

Antioxidants and Cardiovascular Disease R. Nath 2004 Authored by leading investigators in the field of cardiovascular research and practicing clinicians across the globe, this book details the scientific evidence for the heath effect of vitamins, antioxidants and functional food, specifically, their role in the cardiovascular system and provides recommendations in cardiovascular nutrition.

Herbal Medicine Iris F. F. Benzie 2011-03-28 The global popularity of herbal supplements and the promise they hold in treating various disease states has caused an unprecedented interest in understanding the molecular basis of the biological activity of traditional remedies. Herbal Medicine: Biomolecular and Clinical Aspects focuses on presenting current scientific evidence of biomolecular ef

Antioxidants and Cardiovascular Disease R Nath 2004-01-01 This unique book authored by leading investigators in the field of Cardiovascular research and practicing clinicians across the globe details the scientific evidence for the heath effect of vitamins, antioxidants, trace elements and functional food, specifically their role in Cardiovascular system and provides

up-to-date recommendations in the area of Cardiovascular nutrition including dietary micronutrients and supplements.Genetics of coronary disease as well as racial differences and risk factors, the role of Homocystine dietary fats, importance of antioxidant trace elements, genetic and racial differences especially in relation to cardiovascular effects, Clinical relevance of trace elements and minerals such as Chromium, Copper, Fluoride, Iron, Iodine, Molybdenum, Manganese, Selenium, Zinc, Calcium, Magnesium and Phosphorous have all been covered in relation to cardiovascular disease.

Studies on Atherosclerosis Martin Rodriguez-Porcel 2018-07-12 This volume explores the role free radicals and antioxidants within the development of vascular disease, examining fundamental research and translating preclinical knowledge to clinical trials. The expertly authored chapters describe the relationship of oxidative stress to atherosclerosis and the cardiovascular system, exploring its role in cardiac fibrosis, renovascular disease, hypertension, and regulation of blood pressure and cerebral vascular tone. The concluding chapter discusses the current state of clinical research, contextualizing clinical trials within the existing theoretical framework and analyzing attempts to preserve oxidant stress under various conditions. With its concise and authoritative analysis of pre-clinical research and clinical results, Studies in Atherosclerosis – part of the bestselling Oxidative Stress in Basic Research and Clinical Practice series – is essential for researchers and clinicians focusing in cardiology, nephrology, or oxidative stress.

New Developments in Antioxidants Research Harold V. Panglossi 2006 In biological systems, the normal processes of oxidation (plus a minor contribution from ionising radiation) produce highly reactive free radicals. These can readily react with and damage other molecules. In some cases the body uses free radicals to

destroy foreign or unwanted objects, such as in an infection. However, in the wrong place, the body's own cells may become damaged. Should the damage occur to DNA, the result could be cancer. Antioxidants decrease the damage done to cells by reducing oxidants before they can damage the cell. Virtually all studies of mammals have concluded that a restricted calorie diet extends the life-span of mammals by as much as 100%. This remarkable finding suggests that food is actually more damaging than smoking. As food produces free radicals (oxidants) when metabolised, antioxidant-rich diets are thought to stave off the effects of aging significantly better than diets lacking in antioxidants. The reduced levels of free radicals, resulting from a reduction in their production by metabolism, is thought to be a major cause of the success of caloric restriction in increasing life span. Antioxidants consist of a group of vitamins including vitamin C, vitamin E, selenium and carotenoids, (such as beta-carotene, lycopene, and lutein). This new book brings together the latest research in this dynamic field.

Oxidative Stress and Vascular Disease John F. Keaney Jr. 2012-12-06 One of the major biomedical triumphs of the post-World War II era was the defmitive demonstration that hypercholesterolemia is a key causative factor in atherosclerosis; that hypercholesterolemia can be effectively treated; and that treatment significantly reduces not only coronary disease mortality but also all cause mortality. Treatment to lower plasma levels of cholesterol - primarily low density lipoprotein (LDL) cholesterol - is now accepted as best medical practice and both physicians and patients are being educated to take aggressive measures to lower LDL. We can confidently look forward to important decreases in the toll of coronary artery disease over the coming decades. However, there is still uncertainty as to the exact mechanisms by which elevated plasma cholesterol and LDL levels initiate and favor the progression of lesions.

There is general consensus that one of the earliest responses to hypercholesterolemia is the adhesion of monocytes to aortic endothelial cells followed by their penetration into the subendothelial space, where they differentiate into macrophages. These cells, and also medial smooth muscle cells that have migrated into the subendothelial space, then become loaded with mUltiple, large droplets of cholesterol esters . . . the hallmark of the earliest visible atherosclerotic lesion, the so-called fatty streak. This lesion is the precursor of the more advanced lesions, both in animal models and in humans. Thus the centrality of hypercholesterolemia cannot be overstated. Still, the atherogenic process is complex and evolves over a long period of time.

Oxidative Stress in Heart Diseases Sajal Chakraborti 2019-11-06 This book bridges the gap between fundamental and translational research in the area of heart disease. It describes a multidisciplinary approach, and demonstrates biochemical mechanisms associated with dysregulation of redox signaling, which leads heart disease. Presenting recent studies on improved forms of ROS scavenging enzymes; specific inhibitors for different ROS generating enzymes; and oxidant induced signaling pathways and their antagonists that allow subtle modulation of redox signaling, it also discusses the spatial and temporal aspects of oxidative stress in the cardiovascular system, which are of vital importance in developing better strategies for treating heart disease. Each chapter offers researchers valuable insights into identifying targets for drug development for different types of heart disease.

Fight Heart Disease with Vitamins and Antioxidants Kedar N. Prasad 2014-11-20 The most complete and up-to-date resource on the powerful benefits of micronutrients for heart disease prevention and treatment • Provides an easy-to-follow program of nutritional supplements to halt the progression of heart disease and prevent its onset despite family

history • Shows how merely changing your diet and activity level cannot fully counteract the chronic inflammation and free radical damage at the source of heart disease • Debunks flawed conclusions of the medical community that show vitamins and antioxidants to be ineffective for treatment of heart disease and high blood pressure In this practical scientific guide, leading researcher in cancer, heart disease, and diabetes prevention Kedar N. Prasad, Ph.D., reveals the latest revolutionary discoveries on the use of antioxidants and micronutrients to treat heart disease. He details how the proper combinations of vitamin and antioxidant supplements can greatly increase the effectiveness of standard medical treatments for heart disease as well as help balance cholesterol levels and blood pressure, minimize plaque and clot formation, reduce angina and atherosclerosis, and prevent onset of heart disease despite family history. Prasad shows how chronic inflammation, oxidative stress, homocysteine levels, and free radical damage are the chief culprits in the progression of heart disease and that merely changing your diet and activity level and regulating cholesterol and blood pressure cannot fully counteract an unhealthy internal state. He provides an easy-to-follow daily supplement regime for multiple age groups to target free radical damage and cell injury and stop the progression of heart disease and its related complications. Sharing the scientific data on familial heart disease and antioxidant use, he debunks the flawed conclusions of the medical community that vitamins and antioxidants are ineffective for heart disease, revealing how their studies focused on specific micronutrients rather than synergistic combinations. Offering the missing complement to the standard care of medications, diet, exercise, and lifestyle changes promoted by mainstream medicine, this guide provides a powerful approach to heart disease prevention, treatment, and care.

Vitamin E Matthew H. Braunstein 2006 Vitamin E

is a fat-soluble vitamin that exists in eight different forms. Each form has its own biological activity, which is the measure of potency or functional use in the body. Alpha-tocopherol (-tocopherol) is the name of the most active form of vitamin E in humans. It is also a powerful biological antioxidant. Vitamin E in supplements is usually sold as alpha-tocopheryl acetate, a form that protects its ability to function as an antioxidant. The synthetic form is labelled 'D, L' while the natural form is labelled 'D'. The synthetic form is only half as active as the natural form. Antioxidants such as vitamin E act to protect the cells against the effects of free radicals, which are potentially damaging by-products of energy metabolism. Free radicals can damage cells and may contribute to the development of cardiovascular disease and cancer. Studies are underway to determine whether vitamin E, through its ability to limit production of free radicals, might help prevent or delay the development of those chronic diseases. Vitamin E has also been shown to play a role in immune function, in DNA repair and other metabolic processes. This book presents leading research on this important topic.

The Sinatra Solution Stephen T. Sinatra, M.D. 2009-04-24 Board-certified cardiologist Dr. Stephen T. Sinatra discusses the importance of energy metabolism on cardiovascular health and the positive impact these three energy-supplying nutrients have on the cardiovascular system. He guides you through the basics of energy metabolism and cardiac bioenergetics, and clearly explains the role of coenzyme Q10, L-carnitine, and D-ribose in the body and specifically how they affect your heart health. He also provides concise and informative examples of case histories and scientific studies that are testament to the important contribution the supplemental use of these energy-supplying nutrients make in the lives of people with heart disease every day.

Antioxidant Food Supplements in Human

Health Lester Packer 1999-03-16 Antioxidant Food Supplements in Human Health discusses new discoveries in the areas of oxygen and nitric oxide metabolism and pathophysiology, redox regulation and cell signaling, and the identification of natural antioxidants and their mechanisms of action on free radicals and their role in health and disease. An essential resource for researchers, students, and professionals in food science and nutrition, gerontology, physiology, pharmacology, and related areas. Health effects of antioxidant nutrients Nutrients of vitamins C and E, selenium, alpha-lipoic acid, coenzyme Q10, carotenoids, and flavonoids Natural source antioxidants, including pine bark, ginko biloba, wine, herbs,uyaku, and carica papaya

The Portfolio Diet for Cardiovascular Disease Risk Reduction Wendy Jenkins 2019-03-15 The Portfolio Diet for Cardiovascular Disease Risk Reduction: An Evidence Based Approach to Lower Cholesterol through Plant Food Consumption examines the science of this new dietary technology to reduce serum cholesterol and aid in cardiovascular health. With a thorough examination into the scientific rationale for the use of this dietary approach, discussions are included on the experimental findings both for the diet and its 4 individual food components: nuts, legume proteins, viscous fibers, and plant-sterol-enriched foods. Referenced with data from the latest relevant publications and enhanced with practical details (including tips, dishes, and menus), the reader is enabled to meet the goals of serum cholesterol lowering and CVD risk reduction. Provides the scientific basis for the selection of the foods included in the Dietary Portfolio and the experimental evidence demonstrating cholesterol lowering and cardiovascular risk factor reduction Provides an understanding of the current guidelines for lowering cholesterol and other risk factors of cardiovascular disease, explaining how the Dietary Portfolio effects these components

and compares to other diet based approaches Provides a holistic view of the Dietary Portfolio by investigating issues of sustainability and ethics in the food system Allows readers to acquire the skills to successfully construct a potent cholesterol-lowering diet Includes tips, palatable recipes and meal planning aids

Diabetic Cardiomyopathy Belma Turan 2014-01-08 Diabetes has long been recognized as a disease of high blood sugar, and there has been a continuous search of the exact reason for its development and effective treatment. In 2005, the World Health Organization had estimated that more than 180 million people worldwide suffer from diabetes mellitus and indicated that this figure is likely to double within the next 20 years. Among the 3.8 million deaths each year associated with diabetes, about two thirds are attributable to cardiovascular complications, and diabetes is now considered to be a major metabolic risk factor for the occurrence of heart disease. Diabetic Cardiomyopathy: Biochemical and Molecular Mechanisms is a compilation of review articles devoted to the study on the topic with respect to biochemical and molecular mechanisms of hyperglycaemia. The wide range of areas covered here is of interest to basic research scientists, clinicians and graduate students, who are devoted to study the pathogenesis of diabetes-induced cardiovascular dysfunction. Furthermore, some chapters are directed towards increasing our understanding of novel ways for the prevention/treatment of cardiomyopathy. Twenty five articles in this book are organized in three sections. The first section discusses general aspects of the metabolic derangements in diabetic cardiomyopathy including metabolic alterations and substrate utilization as well as cardiac remodelling in the heart; role of diet in the development of metabolic syndrome in the heart; effect of hyperglycaemia in terms of biochemical and structural alterations in heart. In the second section, several cellular and

molecular mechanisms are discussed indicating that diabetic cardiomyopathy is a multifactorial and complex problem. The third section discusses the prevention and treatment of diabetes using appropriate diet, proper supplements including antioxidants, angiotensin inhibitors and some other drugs. All in all, this book discusses the diverse mechanisms of diabetic cardiomyopathy with some information on new therapeutic approaches for finding solutions to prevent or reverse the development of cardiac dysfunction.

Antioxidants and Cardiovascular Disease

Martial G. Bourassa 2008-11-01 Chronic oxidative stress is associated with the aging process and often leads to the development of disorders such as cancer and arterial disease. Cardiovascular conditions in which oxidation damage has been strongly implicated include atherosclerosis, myocardial ischemia and reperfusion, coronary restenosis, diabetes mellitus, and congestive heart failure. Antioxidants and Cardiovascular Disease, Second Edition covers three major topics: 1) the first seven chapters review the oxidative modifcation hypothesis and its close relationship to lipid metabolism and to the pathogenesis of atherosclerosis; 2) the next four chapters describe the different compounds, nutrients and supplements with antioxidant properties and their mechanisms of action; 3) and finallly, the last ten chapters discuss the potential benefits of antioxidants in overall cardiovascular prevention, including hypertension, diabetes mellitus, dyslipidemias, and in the treatment and prevention of specific conditions such as chronic coronary artery disease, restenosis after percutaneous coronary intervention, and chronic heart failure. Antioxidants and Cardiovascular Disease, Second Edition is written by recognized experts in the fields of atherosclerosis, heart failure and antioxidants. It should be of interest to medical students and fellows, researchers, and practicing physicians. There has been rapid progress in our

knowledge in this field during the last two to three years. Thus the current reedition appears timely. For instance, this second edition captures several recently reported and published clinical trials as welll as new information on diabetic and hypertensive cardiovascular disease.

Endothelium and Cardiovascular Diseases Protasio Lemos Da Luz 2018-02-03 Endothelium and Cardiovascular Diseases: Vascular Biology and Clinical Syndromes provides an in-depth examination of the role of endothelium and endothelial dysfunction in normal vascular function, and in a broad spectrum of clinical syndromes, from atherosclerosis, to cognitive disturbances and eclampsia. The endothelium is a major participant in the pathophysiology of diseases, such as atherosclerosis, diabetes and hypertension, and these entities are responsible for the largest part of cardiovascular mortality and morbidly. Over the last decade major new discoveries and concepts involving the endothelium have come to light. This important reference collects this data in an easy to reference resource. Written by known experts, and covering all aspects of endothelial function in health and disease, this reference represents an assembly of recent knowledge that is essential to both basic investigators and clinicians. Provides a complete overview of endothelial function in health and diseases, along with an assessment of new information Includes coverage of groundbreaking areas, including the artificial LDL particle, the development of a new anti-erectile dysfunction agent, a vaccine for atherosclerosis, coronary calcification associated with red wine, and the interplay of endoplasmic reticulum/oxidative stress Explores the genetic features of endothelium and the interaction between basic knowledge and clinical syndromes

Antioxidants in Food Jan Pokorny 2001-04-12 Antioxidants are an increasingly important ingredient in food processing. Their traditional role is, as their name suggests, in inhibiting the development of oxidative rancidity in fat-based

foods, particularly meat and dairy products and fried foods. However, more recent research has suggested a new role in inhibiting cardiovascular disease and cancer. Antioxidants in Food: Practical Applications provides a review of the functional role of antioxidants and discusses how they can be effectively exploited by the food industry. The first part of the book looks at antioxidants and food stability with chapters on the development of oxidative rancidity in foods, methods for inhibiting oxidation, and ways of measuring antioxidant activity. Part 2 looks at antioxidants and health, including chapters on antioxidants and cardiovascular disease, their antitumour properties, and bioavailability. A major trend in the food industry, driven by consumer concerns, has been the shift from the use of synthetic to natural ingredients in food products. Part 3 looks at the range of natural antioxidants available to the food manufacturer. The final section of the book looks at how these natural antioxidants can be effectively exploited, covering such issues as regulation, preparation, antixoxidant processing functionality and their use in a range of food products from meat and dairy products, frying oils and fried products, to fruit and vegetables and cereal products.

Epidemiology and Biostatistics Tongzhang Zheng 2011

Antioxidant-Antidiabetic Agents and Human Health Oluwafemi Oguntibeju 2014-02-05 The human system employs the use of endogenous enzymatic as well as non-enzymatic antioxidant defence systems against the onslaught of free radicals and oxidative stress. Enzymatic antioxidants and non-enzymatic antioxidants work synergistically with each other, using different mechanisms against different free radicals and stages of oxidative stress. Dietary and lifestyle modifications are seen as the mainstay of treatment and management of chronic diseases such as diabetes mellitus. The major aims of dietary and lifestyle changes are to reduce weight, improve glycaemic control and

reduce the risk of coronary heart disease, which accounts for 70- 80% of deaths among those with diabetes. It is also important to note that medicinal plants have been used as medicines since ancient time, and continue to play significant role even in modern medicine in management and treatment of chronic diseases. Impressive numbers of modern therapeutic agents have been developed from plants. Phytochemicals have been isolated and characterised from fruits such as grapes and apples, vegetables such as broccoli and onion, spices such as turmeric, beverages such as green tea and red wine, as well as many other sources. The WHO estimates that approximately 80% of the worlds inhabitants rely on traditional medicine for their primary health care and many medicinal plants have ethno-medical claims of usefulness in the treatment of diabetes and other chronic diseases globally, and have been employed empirically in antidiabetic, antihyperlipidemic, antihypertensive, antinflammatory and antiparasitic remedies. This book examines the role of antioxidant-rich natural products in management and treatment of diabetes and other chronic diseases.

Amino Acids in Nutrition and Health Guoyao Wu 2020-08-06 This edited volume comprehensively highlights recent advances in the metabolism, nutrition, physiology, and pathobiology of amino acids in all the systems of humans and other animals (including livestock, poultry, companion animals, and fish). It enables readers to understand the crucial roles of amino acids and their metabolites in the health and diseases of the circulatory, digestive, endocrine, immune, muscular, nervous, reproductive, respiratory, skeletal, and urinary systems, as well as the sense organs (eyes, ears, nose, skin, and tongue). Readers will learn that amino acids are not only the building blocks of protein, but are also signalling molecules, as well as regulators of gene expression, metabolic processes and developmental changes in the body. This

knowledge will guide nutritional practices to improve the growth, development and health of humans and other animals, as well as prevent and treat chronic (e.g., obesity, diabetes, and cardiovascular disorders) and infectious (e.g., bacterial, fungal, parasite, and viral) diseases. Editor of this volume is an internationally recognized expert in nutritional biochemistry. He has over 38 years of experience with research and teaching at world-class universities in the area of amino acid biochemistry, nutrition, and physiology. He has published more than 625 papers in peer-reviewed journals, 62 chapters in books, and authored two text/reference books, with an H-index of 117 and more than 55,000 citations in Google Scholar. This publication is a useful reference for professionals as well as undergraduate and graduate students in animal science, biochemistry, biomedical engineering, biology, human medicine, food science, kinesiology, nursing, nutrition, pharmacology, physiology, toxicology, veterinary medicine, and other related disciplines. In addition, all chapters provide general and specific references to amino acids in systems health for researchers and practitioners in biomedicine, animal and plant agriculture, and aquaculture, and for government policy makers.

Free Radicals in Biology and Medicine Barry Halliwell 2015-07-16 Free Radicals in Biology and Medicine has become a classic text in the field of free radical and antioxidant research. Now in its fifth edition, the book has been comprehensively rewritten and updated whilst maintaining the clarity of its predecessors. Two new chapters discuss 'in vivo' and 'dietary' antioxidants, the first emphasising the role of peroxiredoxins and integrated defence mechanisms which allow useful roles for ROS, and the second containing new information on the role of fruits, vegetables, and vitamins in health and disease. This new edition also contains expanded coverage of the mechanisms of oxidative damage to lipids, DNA, and proteins (and the repair of such damage),

and the roles played by reactive species in signal transduction, cell survival, death, human reproduction, defence mechanisms of animals and plants against pathogens, and other important biological events. The methodologies available to measure reactive species and oxidative damage (and their potential pitfalls) have been fully updated, as have the topics of phagocyte ROS production, NADPH oxidase enzymes, and toxicology. There is a detailed and critical evaluation of the role of free radicals and other reactive species in human diseases, especially cancer, cardiovascular, chronic inflammatory and neurodegenerative diseases. New aspects of ageing are discussed in the context of the free radical theory of ageing. This book is recommended as a comprehensive introduction to the field for students, educators, clinicians, and researchers. It will also be an invaluable companion to all those interested in the role of free radicals in the life and biomedical sciences.

Vitamin Intake and Health Suzanne K. Gaby 1990-09-28 Describes the biochemical and physiological effects of most of the clinically important vitamins, and presents indications of the health benefits of vitamin intake beyond the levels currently established as recommended daily allowance by the National Academy of Science. The analysis focuses primaril