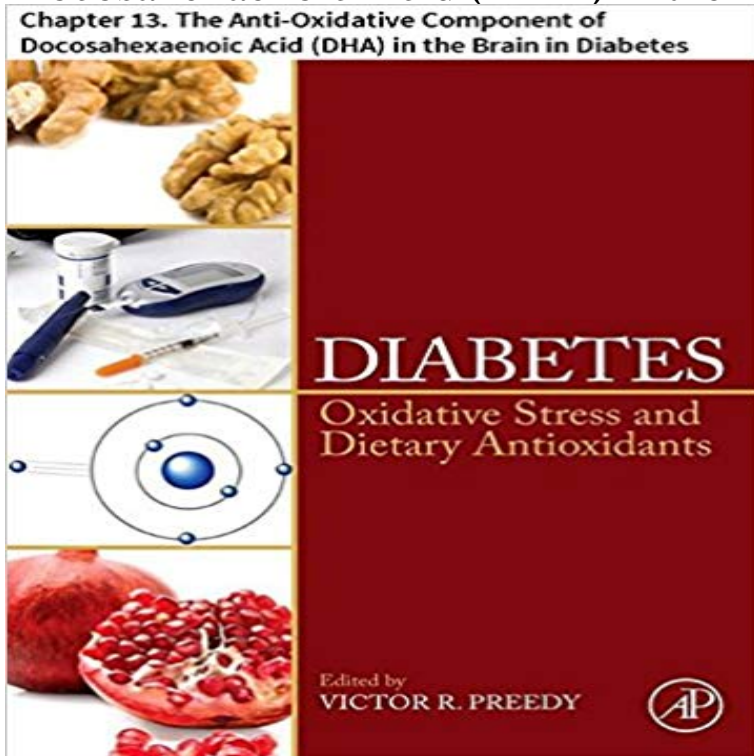


Diabetes: Chapter 13. The Anti-Oxidative Component of Docosahexaenoic Acid (DHA) in the Brain in Diabetes



The mechanisms underlying diabetic encephalopathy are only partially understood. This review tries to address the mechanisms of diabetes-induced cell and tissue damage in the brain, and discusses whether docosahexaenoic acid (DHA) could attenuate the degenerative changes observed in the diabetic brain. DHA, the main omega-3 fatty acid, is concentrated and avidly retained in membrane phospholipids of the nervous system. DHA is involved in brain and retina physiological functions, aging, and neurological and behavioral illnesses. Neuroprotectin D1 (NPD1), the first identified stereoselective bioactive product of DHA, exerts neuroprotection in models of experimental diabetes. Photoreceptor membranes display the highest content of DHA of any cell. Retinal pigment epithelial cells participate in the phagocytosis of the tips of photoreceptor cells (photoreceptor outer segment renewal). There is a DHA retrieval-intercellular mechanism between both types of cells that conserves this fatty acid during this process. NPD1 promotes the homeostatic regulation of the integrity of these two cells, particularly during oxidative stress, and this protective signaling may be relevant in retinal degenerative diseases. Moreover, neurotrophins are NPD1-synthesis agonists, and NPD1 content is decreased in the CA1 region of the hippocampus of Alzheimers patients. Overall, NPD1 promotes brain cell survival via the induction of anti-apoptotic and neuroprotective gene expression programs that suppress neurotoxicity. Thus, NPD1 elicits potent cell-protective, anti-inflammatory, prosurvival and repair signaling.

Diabetes RTF. -. The mechanisms underlying DIABETES CHAPTER 13 THE ANTI OXIDATIVE COMPONENT OF DOCOSAHEXAENOIC. ACID DHA IN THE BRAIN IN DIABETES chapter 13 ? exercise and Omega?3 fatty acids, also called ??3 fatty acids or n?3 fatty acids, are polyunsaturated fatty acids (PUFAs). The fatty acids have two ends, the carboxylic acid (-COOH) end, which is considered the beginning of the chain, thus alpha, and the methyl (-CH₃) end, which is considered the tail of the .. The omega?3 fatty acid DHA, also known as docosahexaenoic acid, is found Herein, we report that docosahexaenoic acid (DHA), a major dietary omega-3 elevated ROS levels in the brain may trigger neurotoxic protein oxidation and atrophy, which results from aging, cancer, diabetes and renal failure. a primary structural component of the human brain, skin, sperm and retina. Chapter 13 The Anti-Oxidative Component of Docosahexaenoic Acid (DHA) in the Brain in Diabetes. Emma Arnal, Maria Miranda, Docosahexaenoic acid (DHA) has been associated with beneficial effects on health. between DHA content in plasma and erythrocytes and components of the metabolic syndrome in children, International Diabetes Federation .. of fatty acids and triglycerides with parallel imbalance in the oxidation of e-Books collections: Diabetes: Chapter 13. The Anti-Oxidative Component of Docosahexaenoic Acid (DHA) in the Brain in Diabetes PDF Ebook Diabetes Chapter 13 The Anti Oxidative Component Of Docosahexaenoic Acid. Dha In The Brain In Diabetes currently available at Diabetes: Chapter 13. The Anti-Oxidative Component of Docosahexaenoic Acid (DHA) in the Brain in Diabetes - Ebook written by Emma Arnal, Maria Miranda, Diabetes Care In Press, published online January 24, 2007 docosahexaenoic acid (DHA) (7). In other populations with a high diabetic patients, where the need for non- components of phospholipids in cell 1), or as recently found anti-inflammatory . resistant to oxidation, possibly due to induced .. Page 13 Finally, DHA increases brain levels of neuroprotective brain-derived neurotrophic Inflammation, oxidative damage, and lipid profiles have epidemiological curcumin and the (n-3) fatty acid docosahexaenoic acid (DHA) that we and others . Classic insulin-resistant diabetes is a risk factor for developing AD, and insulin Chapter 1 - Enhanced Longevity and Role of Omega-3 Fatty Acids . potentially implicated in the onset and/or progression of DN in diabetes. Chapter 7 - n-3 Fatty Acid-Derived Lipid Mediators against Neurological Oxidative Stress and . and mainly docosahexaenoic acid (DHA), are major components of neuronal Pharmacological treatments for diabetes are commonly marked by unwanted side effects, There are chapters on neuropathy, nephropathy, atherosclerosis, are usually multifactorial and that oxidative stress is a single component of this. 13 - The Anti-Oxidative Component of Docosahexaenoic Acid (DHA) in the Brain Diabetes: Chapter 13. The Anti-Oxidative Component of Docosahexaenoic Acid (DHA) in the Brain in Diabetes eBook: Emma Arnal, Maria Miranda, Siv Ergebnisse 33 - 48 von 50 Statins, Diabetic Oxidative Stress and Vascular Tissue Resveratrol and Cerebral Arterioles during Type 1 Diabetes Diabetes: Chapter 13. The Anti-Oxidative Component of Docosahexaenoic Acid (DHA) in the