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System: Implications for the Genesis of Atherosclerosis in Mammals
Genesis of Atherosclerotic LesionsNatural Animal Model: The Fish; Fish Coronary Circulation; Fish Coronary Artery Thickenings; Genesis of Fish Lesions; Biomechanical Factors in Fish; Dietary In.uences and Role of Cholesterol in Fish; Biology of the Vascular Smooth Muscle in Fish; Concluding Remarks: What Can We Learn From the Fish as a Natural Model?; References; Chapter 4 Disuse Osteoporosis and Disuse Muscle Atrophy; Disuse Osteoporosis; Bone biology; Parathyroid hormone (PTH); Vitamin D; Leptin; Mechanical stress; Disuse osteoporosis
Natural animal model: American black bear (Ursus americanus)Bone homeostasis in the bear: research questions; Disuse Muscle Atrophy; Maintenance of muscle mass; Protein degradation: mechanisms; Animal models; Studies in humans and small mammal hibernators; Humans; Small mammal hibernators; Natural animal model: the American black bear; The bear: a perspective; References; Chapter 5 Ammonia Toxicity; Ammonia Tolerance and Metabolism; Ammonia tolerance; Ammonia metabolism; Brain Ammonia Metabolism; Glutamatergic Neurons; General considerations (Purves et al., 2004)
Glutamate, a Neurotransmitter and the "Glutamate-Glutamine" CycleMechanism of Ammonia Neurotoxicity; Neuropathological effects; Effects on Brain Energy Metabolism; Effects on Glutamatergic Synapses; Ammonia and the Fish Central Nervous System; Role of glutamine; Glutamate; Brain energy metabolism; NMDA receptors; Summary; References; Chapter 6 Hypoxia/Ischemia; Cerebral Blood Flow: Its Regulation; Brain Energy Metabolism; Oxygen and Oxygen/Glucose Deprivation and the Brain; General features of neuronal response; Anoxia tolerant mammalian neurons; Neonatal brain; Dorsal vagal neurons
Neonatal neurons

Sommario/riassunto

This book describes a novel and unique approach to the treatment of human diseases based on the study of natural animal models. A natural animal model is defined as an animal group or species that possesses a set of biochemical/physiological characteristics which are natural and adaptive for that animal, but are quite abnormal for humans. For example, how is it that birds can tolerate blood glucose concentrations which in humans are associated with diabetes. The natural animal model is living proof that a biological answer to this question is available. By studying natural animal models, we ca