

1. Record Nr.	UNINA9910973620303321
Titolo	Neuroplasticity in the auditory brainstem : from physiology to the drug therapy / / Angelo Salami. editor
Pubbl/distr/stampa	New York, : Nova Science Publishers, c2011
ISBN	1-61122-383-0
Edizione	[1st ed.]
Descrizione fisica	1 online resource (191 p.)
Collana	Neurology : laboratory and clinical research developments Pharmacology : research, safety testing and regulation
Altri autori (Persone)	SalamiAngelo
Disciplina	612.8/5
Soggetti	Auditory pathways Neuroplasticity Brain stem Cochlear implants
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- NEUROPLASTICITY IN THE AUDITORY BRAINSTEM: FROM PHYSIOLOGY TO THE DRUG THERAPY -- NEUROPLASTICITY IN THE AUDITORY BRAINSTEM: FROM PHYSIOLOGY TO THE DRUG THERAPY -- Contents -- Introduction -- Chapter I Anatomy of the Auditory Pathway -- Abstract -- 1. The Inner Ear -- 2. The Auditory Nerve -- 3. The Central Auditory Pathway -- 3.1. The Cochlear Nuclear Complex (CNC) -- 3.2. Superior Olivary Complex (SOC) -- 3.3. Inferior Colliculus (IC) -- 4. Central Pathways and Cortical Projections -- 5. The Primary Auditory Cortex (PAC, AI) -- 6. Efferent Projections -- 6.1. From the AC to both the MBG and IC -- 6.2. From the IC to both Cochlear Nuclei (CN) and the SOC -- 6.3. From the SOC to the Hair Cells -- References -- Chapter II Phsyiology of the Central Auditory System -- Introduction -- Central Auditory Processing Strategies -- Spontaneous Rat -- Intensity Coding -- Frequency Coding -- Temporal Coding -- Sound Localization -- Complex Stimuli -- Variation in the Physiology of the Normal Central Auditory Pathway -- Anesthesia -- Development -- Attention -- Conclusions -- Acknowledgments -- References -- Chapter III Neurobiology of Age Related Hearing Loss -- Abstract -- Introduction -- Neurobiology -- Neurotrophins -- Mitochondrial

Modifications -- Other Mechanisms of Mitochondrial Damage are Related to Lipid Oxidation and Protein Oxidation -- Discussion -- Conclusion -- References -- Chapter IV Neuroplasticity in the Auditory System after Hearing Loss -- Abstract -- Introduction -- Molecular Mechanisms of Neuroplasticity -- Neuroplasticity and Auditory System -- Neurons, Growth Cones and Neuroplasticity -- Neuroplasticity and Experimental Deafness by Cochlear Induced Lesion -- 1. First Phase: Acute Cochlear Nuclei Degeneration [5,6] -- 2. Second Phase: Stabilization of Lesions and Neuroplasticity. 3. Third Phase: Neuroplasticity and CN Reorganization -- Conclusion -- Acknowledgments -- References -- Chapter V Hearing Loss and Balance Dysfunction in Children -- Introduction -- Sensorineural Hearing Loss -- 1. Balance and Vestibular Dysfunction in SHNL -- 2. Cochlear Implantation and Vestibular Function -- Conductive Hearing Loss -- Rehabilitation of Balance and Motor Skills in the Hearing Impaired Child -- Conclusion -- References -- Chapter VI The Effect of Brain Plasticity on the Results of Cochlear Implantation -- Abstract -- 1. The Importance of Brain Research in Deaf Patients -- 2. Cross-Modal Plasticity -- 3. Method Used to Evaluate Human Brain Function -- 4. PET Studies in Deaf Patients -- 4.1. Cortical Metabolism in Prelingually Deaf Children -- 4.2. Cortical Metabolism in Postlingually Deaf Adults -- 4.3. The Association between Cortical Metabolism and Post-implant Speech Perception in the Prelingually Deaf -- 4.4. Changes in Cortical Metabolism after Cochlear Implantation -- 5. Changes in Cognitive Function in Deaf Patients -- 6. Studies Using Deaf Animal Models -- 6.1. Changes in Auditory Cortex Metabolism in the White Rat Model -- 6.2. Molecular Changes in the Auditory Cortex of a Deaf White Rat Model -- 6.3. Electrophysiologic and Metabolic Changes in the Auditory Cortex in a Deaf Cat Model -- 7. Summary and Future Research Directions -- Conclusion -- Acknowledgments -- References -- Chapter VII Pharmacology of New Drugs Used to Improve the Neuroplasticity of the Central Auditory Pathway -- Abstract -- Introduction -- Coenzyme Q10 -- Basic Pharmacology and Toxicity -- Coenzyme Q10 and Neuroprotection -- Experimental and Clinical Data -- Q-TER®: A Water-soluble Formulation of CoQ10 -- Citicoline -- Synthesis of Membrane Phospholipids -- Neurotransmitter Production -- Basic Pharmacology and Toxicity. Experimental and Clinical Data -- Conclusion -- References -- Chapter VIII New Drugs to Improve the Neuroplasticity of the Central Auditory Pathway -- Abstract -- Introduction -- Antioxidant Agents -- Methods -- Results -- Discussion -- Conclusion -- References -- Chapter IX Central Auditory System Neuroplasticity and Hippocampal Neurogenesis following Cochlear Insults -- Abstract -- Introduction -- Salicylate-Induced Cochlear Insult -- Acute Salicylate Exposure -- Chronic Salicylate Exposure -- Carboplatin-induced Ototoxicity -- Acoustic Overstimulation -- Conclusion -- Acknowledgments -- References -- Index -- Blank Page.

Sommario/riassunto

According to the theory of neuroplasticity, thinking, learning, acting and hearing can change both the brain's physical structure and functional organisation according to the peripheral stimuli. This book reviews the knowledge on the neuroplasticity in the auditory brainstem: from physiology to the drug therapy.