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Brain Plasticity and the Control of Hormonal Homeodynamics: A Recapitulation; Chapter 3 Hormonal Influences on Brain Plasticity: I. Melatonin, Thyroid Hormones and Corticosteroids; Introduction: A Large Variety of Hormones Regulate Brain Plasticity; Hormones or Paracrine Factors?; Melatonin; Thyroid Hormones Stress, Corticosteroids, and Brain Plasticity Chapter 4 Hormonal Influences on Brain Plasticity: II. Sex Hormones; Introduction: Sex Hormones and Brain Remodeling; The First Evidences; Regulation by Estradiol and Progesterone of Synaptic and Glial Remodeling in the Arcuate Nucleus; Regulation by Estradiol and Progesterone of Synaptic Remodeling in the Ventromedial Hypothalamic Nucleus; Regulation by Estradiol and Progesterone of Synaptic Remodeling in the Hippocampus; Regulation by Estradiol and Progesterone of Glial Remodeling in the Hippocampus Regulation by Estradiol and Progesterone of Adult Neurogenesis Role of Brain Estradiol Synthesis in the Regulation of Synaptic Plasticity and Neuronal Replacement; Androgens, Synaptic Plasticity, and Cellular Replacement in the Song System of Songbirds; Androgens and Synaptic Plasticity in Motoneurons; Androgens, Synaptic plasticity, and Cellular Replacement in the Mammalian Brain; Chapter 5 Hormonal Influences on Brain Plasticity: III. Peptide Hormones; Introduction: Peptide Hormones as Regulators of Brain Remodeling; Vasopressin and Oxytocin; Corticotropin-Releasing Hormone and Urocortins Prolactin Gonadotropin-Releasing Hormone; Insulin; Growth Hormone/Insulin-Like Growth Factor-I; Insulin-Like Growth Factor-I and Synaptic Plasticity; Insulin-Like Growth Factor-I and Adult Neurogenesis; Interactions of Insulin-Like Growth Factor-I and Estradiol in the Regulation of Brain Plasticity; Erythropoietin; Angiotensin; Feeding Hormones: Leptin, Ghrelin and Glucagon-Like Peptide-1; Hormonal Influences on Brain Plasticity: Recapitulation of the Chapters 3, 4 and 5; Chapter 6 Life Stages, Hormones, and Brain Remodeling: Early Hormonal Influences on Brain Mutability Introduction: Hormonal Imprinting of the Nervous System

Sommario/riassunto

The nervous system has a remarkable capacity for self-reorganization, and in this first systematic analysis of the interaction between hormones and brain plasticity, Luis Miguel Garcia-Segura proposes that hormones modulate metaplasticity in the brain. He covers a wide variety of hormones, brain regions, and neuroplastic events, and also provides a new theoretical background with which to interpret the interaction of hormones and brain remodeling throughout the entire life of the organism. Garcia-Segura argues that hormones are indispensable for adequately adapting the endogenous neuroplastic
