

Preface

The perinatal period of neuro-ontogeny is a critical stage in organization and modeling of brain and peripheral nervous system. During this developmental stage nerve growth to target sites is under the influence of neurotrophins; neurotransmitter receptors on nerves, activated or not, govern in-part their ultimate viability/survivability, as redundancy leads to nerve cell death; and the residual neural organization of the neural network becomes the life-long template of neural organization. It is in this melding period wherein the effects of neurotoxins and receptor agonists/antagonists intervene to produce permanent effects in development. This book on *Neurotoxin Modeling of Brain Disorders—Life-long Outcomes in Behavioral Teratology* is intended to present an overview on some of the most common agents that are known to effect the neural organization of brain. Abnormalities in some instances are obvious from histopathologic evidence, also from neural dynamics or receptor deficiencies; and these altered neural patterns are manifest in inherent behavioral expressions or in altered behavioral responses to challenge by associated receptor agonists or antagonists. Unfortunately, brief exposure to multiple substances during neural ontogeny can often result in life-long patterns of expression. This important topic, mainly studied in animals, is reflective of the kinds of neural changes that can occur in human fetuses when a mother is exposed during pregnancy to a variety of substances including drugs of abuse. The chapters in this book highlight the types of life-long changes in brain that can occur when substances act on the brain during ontogeny. The book is thus a brief compendium on neuroteratologic agents; the book is instructive to those engaged in studies in neuro-ontogeny; the book is also important to clinicians involved in the care of pregnant women or children.

Neurotoxin Modeling of Brain Disorders — Life-long
Outcomes in Behavioral Teratology

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