

# Table of Contents

## **Epidemiology**

Definitions, Risks and Indices . . . . .	3
M. SUSSEr and Z. STEIN	
The Quantification of Risk Factors in Major Neurodevelopmental Disorders . . . . .	12
M. SUSSEr	
Epidemiologic Panorama of Brain Impairments and Causative Factors – Swedish Experiences . . . . .	28
O. HJALMARSSON, B. HAGBERG and G. HAGBERG	
Low Birthweight and Neurological Sequelae – A Summary of Some Swedish Studies . . . . .	39
G. ROTH	

## **Biology and Pathogenetic Mechanisms**

Genetic Factors Leading to Birth Defects and Diseases of the Newborn . . . . .	43
F. VOGEL	
Developmental Neurology of the Fetus and Newborn . . . . .	50
H. F. R. PRECHTL	
Pathophysiological Mechanisms Leading to Permanent Brain Damage in Surviving Children . . . . .	58
F. J. SCHULTE	
Trauma and the Developing Brain . . . . .	64
J. S. WIGGLESWORTH	
How and When Does Antenatal Hypoxia Damage Fetal Brains? . . . . .	70
R. L. NAEYE	

## **Intrauterine Deprivation - Growth Retardation and Chronic Hypoxia**

Antepartum Events and Cerebral Handicap . . . . .	83
R. L. NAEYE and E. C. PETERS	

Available Evidence Relating Intrauterine Growth Retardation to Neuromotor Dysfunction and Mental Handicap . . . . .	92
G. BREART	

Growth Retardation: Individual Risk Assessment During Pregnancy . . . . .	99
G. PONTONNIER, H. GRANDJEAN, A. FOURNIE and M.-F. SARRAMON	

Management of Growth Retardation with a View to Preventing Neuromotor Dysfunction and Mental Handicaps .	108
K. R. NISWANDER	

Abnormal Antepartum Cardiotocogram and Neuromotor Dysfunction in Term and Preterm Babies . . . . .	117
U. LORENZ and F. KUBLI	

Antepartum Fetal Heart Rate and Movement Pattern in Relation to Oxygenation and Neonatal Neurological Morbidity . . . . .	130
G. H. A. VISSER	

## **Intrapartum Asphyxia and Birth Trauma**

Intrapartum Events and Cerebral Palsy . . . . .	139
K. B. NELSON and J. H. ELLENBERG	

The Relationship Between Obstetrically Preventable Intrapartum Asphyxia, Abnormal Neonatal Neurological Signs and Subsequent Motor Impairment in Babies Born at or After Term . . . . .	149
A. GRANT	

Available Evidence Relating Abnormal Intrapartum Fetal Acid Base Balance (pH) to Neuromotor Dysfunction and Mental Handicap . . . . .	160
E. HOCHULI and H. P. VOGT	

Intrapartum Cardiotocogram, Apgar Score and Acidaemia at Birth: Relationship to Neonatal Neurological Morbidity . . .	168
G. A. H. VISSER and M. J. DIJXHOORN	

Neurological Morbidity of Term Infants as an Indicator of Safe Obstetrical Practice . . . . .	175
C. AMIEL-TISON	

Breech Delivery in the Term Fetus – Relation to Neuromotor Dysfunction and Mental Handicap . . . . .	192
H. MANZKE	

## **Intracranial Hemorrhage and Ischemia**

Pathological Anatomy of Intraventricular Hemorrhage in the Preterm Baby . . . . .	205
J. S. WIGGLESWORTH	

Hypoxia, Loss of Autoregulation and Intracranial Hemorrhage . . . . .	211
H. C. LOU, G. GREISEN and A. TWEED	

Obstetrical Factors and Intracranial Hemorrhage . . . . .	216
M. BRAND and E. SALING	

Prevention of Intraventricular Hemorrhage: Role of Atraumatic Birth and Sedation . . . . .	228
V. VON LOEWENICH and E. HALBERSTADT	

Prediction of Outcome: Periventricular Hemorrhage Versus Ischemia . . . . .	235
A. STEWART and P. HOPE	

Magnetic Resonance Spectroscopy of the Brain and Early Neurodevelopmental Outcome . . . . .	245
E. O. R. REYNOLDS and P. A. HAMILTON	

## **Prognosis of the Very Low Birthweight and Very Preterm Infant**

Outcome of Very Low Birthweight or Very Preterm Infants with Special Consideration of Perinatal Events . . . . .	257
A. STEWART and P. HOPE	

Role of Transport for the Prognosis of the Very Low Birthweight Preterm Infant . . . . .	265
H. T. VERSMOLD	

Improved Outcome of Very Low Birthweight Infants 1977-1986. Critical Analysis of Results and Possible Mechanisms . . . . .	273
H. MENTZEL	

Decreasing Incidence of Neurological Morbidity and Changes of Perinatal Care Strategies in Very Low Birthweight Infants .	282
G. HAAS and I. AUS DER SCHMITTEN	

Prevention of Preterm Labor - A Means of Preventing Handicaps? . . . . .	286
E. PAPIERNIK, J. BOUYER and J. DREYFUS	

### **Recent Follow-up Studies**

Causes of Handicap and Impairment in a Total Population of Dundee (Scotland) Children Aged 8 Weeks to 7 Years . . . . .	297
C. M. DRILLIEN	

The Uruguayan Follow-up Study of Perinatal Events and Mental Handicaps . . . . .	305
R. RUGGIA, R. BELITZKY, C. LÓPEZ DE CAYAFFA, A. AZNÁREZ, J. L. DÍAZ ROSSELLO, D. FONSECA and R. CALDEYRO-BARCIA	

First Results of the Multicenter Finnish-Bavarian Study . . . . .	312
K. P. RIEGEL and B. OHRT	

Neurological Sequelae of Infants with Very Low Birthweight in Hamburg - First Results of a Regional Study . . . . .	321
N. VEELKEN, K. STOLLHOFF, P. WINKLER, K. HELMKE and F. J. SCHULTE	

### **Appendix**

Perinatal Mortality Statistics of the Avon County (UK) Population, 1976-1985, Using Figo 1982 Methodology . . . . .	331
P. M. DUNN and C. B. VULLIAMY	