



CONTENTS

Acknowledgments	xi
Introduction	xiii
CHAPTER 1 Defining and Classifying Cerebral Palsy	1
Defining Cerebral Palsy	1
Classifications of Cerebral Palsy	2
<i>Motor Type Classification</i>	2
<i>Functional Classification</i>	4
<i>Accompanying Impairments</i>	4
<i>Anatomical and Neuroimaging</i>	4
<i>Causation and Timing</i>	4
Summary	5
References	5
CHAPTER 2 Posture and Movement Within the International Classification of Functioning, Disability and Health System	7
The ICF Classification System	7
The ICF-CY and Core Sets for Cerebral Palsy	8
Postural Control and Movement in Children Developing Typically	9
Postural Control and Movement in Children With Cerebral Palsy	11
<i>Possible Body System Impairments</i>	11
<i>Ineffective Postural Control and Movement</i>	12
<i>Activity Limitations</i>	12
<i>Participation Restrictions</i>	12
<i>Environmental Barriers</i>	12
<i>Personal Barriers</i>	12
Summary	13
References	13
CHAPTER 3 Introduction to the Classifications of Cerebral Palsy by Motor Type: Organization of Information	17
Pathophysiology of the Classification of Cerebral Palsy (Health Condition)	17
Activity and Participation	17



Impairments of Body Functions and Structures	18
<i>Neuromuscular System</i>	19
<i>Sensory/Perceptual Systems</i>	21
<i>Musculoskeletal System</i>	22
<i>Respiratory System</i>	24
<i>Physiological Arousal and Attention</i>	25
<i>Cardiorespiratory and Muscle Endurance</i>	26
<i>Swallowing, Digestion, and Elimination</i>	27
<i>Skin Condition</i>	28
Do Children With Cerebral Palsy Develop in a Predictable Way?	28
Intervention With Children With Cerebral Palsy	29
References	30

CHAPTER 4 Children With Hypotonia 37

Pathophysiology	37
Postural Control and Movement in Generalized Hypotonia	38
<i>Head, Neck, Tongue, and Eyes</i>	38
<i>Thoracic Spine, Ribcage, and Upper Extremities</i>	41
<i>Lower Trunk</i>	45
<i>Pelvic Girdle and Lower Extremities</i>	49
Body Structures and Functions	51
<i>Neuromuscular System</i>	51
<i>Sensory/Perceptual Systems</i>	53
<i>Musculoskeletal System</i>	54
<i>Respiratory System</i>	57
<i>Physiological Arousal and Attention</i>	58
<i>Cardiorespiratory and Muscle Endurance</i>	58
<i>Swallowing, Digestion, and Elimination</i>	58
General Intervention Strategies	59
Case Studies	69
<i>Case One</i>	69
<i>Case Two</i>	71
References	75

CHAPTER 5 Children With Spastic Cerebral Palsy 77

Defining Spastic Cerebral Palsy and Related Terms	77
Pathophysiology	78
Postural Control and Movement in Children With Spastic Cerebral Palsy	79
<i>Spastic Quadriplegia</i>	83
Head, neck, tongue, and eyes	83
Thoracic spine, ribcage, and upper extremities	85

Lower trunk	87
Pelvic girdle and lower extremities	90
<i>Spastic Diplegia</i>	92
Head, neck, tongue, and eyes	92
Thoracic spine, ribcage, and upper extremities	94
Lower trunk	96
Pelvic girdle and lower extremities	99
<i>Spastic Hemiplegia</i>	102
Head, neck, tongue, and eyes	102
Thoracic spine, ribcage, and upper extremities	105
Lower trunk	105
Pelvic girdle and lower extremities	106
Body Structures and Functions	108
<i>Neuromuscular System</i>	108
<i>Sensory/Perceptual Systems</i>	112
<i>Musculoskeletal System</i>	114
<i>Respiratory System</i>	122
<i>Physiological Arousal and Attention</i>	123
<i>Cardiorespiratory and Muscle Endurance</i>	123
<i>Swallowing, Digestion, and Elimination</i>	123
General Intervention Strategies for the Child With Spastic Quadriplegia	124
<i>Case Study of a Child With Spastic Quadriplegia</i>	131
General Intervention Strategies for the Child With Spastic Diplegia	133
<i>Case Study of a Child With Spastic Diplegia</i>	137
General Intervention Strategies for the Child With Spastic Hemiplegia	140
<i>Case Study of a Child With Spastic Hemiplegia</i>	142
References	145
CHAPTER 6 Children With Dyskinetic Cerebral Palsy	153
Pathophysiology	153
Subtypes of Dyskinetic Cerebral Palsy	154
<i>Dystonia</i>	155
<i>Choreoathetosis</i>	155
Postural Control and Movement in Children With Dyskinetic Cerebral Palsy	156
<i>Head, Neck, Tongue, and Eyes</i>	156
<i>Thoracic Spine, Ribcage, and Upper Extremities</i>	159
<i>Lower Trunk</i>	166
<i>Pelvic Girdle and Lower Extremities</i>	168
Body Structures and Functions	173
<i>Neuromuscular System</i>	173
<i>Sensory/Perceptual Systems</i>	174

	<i>Musculoskeletal System</i>	177
	<i>Respiratory System</i>	180
	<i>Cardiorespiratory and Muscle Endurance</i>	180
	<i>Swallowing, Digestion, and Elimination</i>	181
	General Intervention Strategies for the Child With Dyskinesia	181
	Case Studies	188
	<i>Case One</i>	188
	<i>Case Two</i>	191
	References	193
CHAPTER 7	Children With Ataxic Cerebral Palsy	197
	Pathophysiology	197
	Postural Control and Movement in Children With Ataxic Cerebral Palsy	198
	<i>Head, Neck, Tongue, and Eyes</i>	200
	<i>Thoracic Spine, Ribcage, and Upper Extremities</i>	203
	<i>Lower Trunk</i>	205
	<i>Pelvic Girdle and Lower Extremities</i>	207
	Motor Learning Differences in Children With Ataxia Compared to Children With Other Types of Cerebral Palsy	209
	Body Structures and Functions	210
	<i>Neuromuscular System</i>	210
	<i>Sensory/Perceptual Systems</i>	211
	<i>Musculoskeletal System</i>	213
	<i>Respiratory System</i>	214
	<i>Physiological Arousal and Attention</i>	214
	<i>Swallowing, Digestion, and Elimination</i>	215
	General Intervention Strategies for the Child With Ataxia	215
	Case Studies	219
	<i>Case One</i>	219
	<i>Case Two</i>	222
	References	224
CHAPTER 8	A Brief Summary of Antigravity Postural Control in Infants With Typical Development	227
	Head, Neck, Tongue, and Eyes	227
	Thoracic Spine, Ribcage, and Upper Extremities	229
	Lower Trunk	232
	Pelvic Girdle and Lower Extremities	234
	References	238
	About the Author	241
	Index	243