

Contents

1	Introduction to Proprioceptive Neuromuscular Facilitation	1
2	Basic Procedures for Facilitation	3
2.1	Resistance	4
2.2	Irradiation and Reinforcement	6
2.3	Manual Contact	8
2.4	Body Position and Body Mechanics	10
2.5	Verbal Stimulation (Commands)	10
2.6	Vision	11
2.7	Traction and Approximation	12
2.8	Stretch	13
2.9	Timing	15
2.10	Patterns	17
3	Techniques	19
3.1	Rhythmic Initiation	20
3.2	Combination of Isotonics	22
3.3	Reversal of Antagonists	24
3.3.1	Dynamic Reversals	24
3.3.2	Stabilizing Reversals	28
3.3.3	Rhythmic Stabilization	31
3.4	Repeated Stretch (Repeated Contractions)	33
3.4.1	Repeated Stretch from Beginning of Range	33
3.4.2	Repeated Stretch Through Range	35
3.5	Contract-Relax	38
3.5.1	Contract-Relax: Direct Treatment	38
3.5.2	Contract-Relax: Indirect Treatment	40
3.6	Hold-Relax	40
3.6.1	Hold-Relax: Direct Treatment	40
3.6.2	Hold-Relax: Indirect Treatment	42
3.7	Replication	43
3.8	PNF Techniques and Their Goals	44

4	Patient Treatment	47
4.1	Evaluation	47
4.2	Treatment Goals	48
4.3	Treatment Planning and Treatment Design	49
4.3.1	Specific Patient Needs	49
4.3.2	Designing the Treatment	49
4.4	Assessment	50
4.5	Direct and Indirect Treatment	50
4.5.1	Direct Treatment	50
4.5.2	Indirect Treatment	50
4.6	Treatment Examples	51
5	Patterns of Facilitation	57
6	The Scapula and Pelvis	63
6.1	Introduction	63
6.2	Applications	63
6.3	Basic Procedures	64
6.4	Scapular Diagonals	67
6.4.1	Specific Scapular Patterns	67
6.4.2	Specific Uses for Scapular Patterns	74
6.5	Pelvic Diagonals	76
6.5.1	Specific Pelvic Patterns	76
6.5.2	Specific Uses for Pelvic Patterns	88
6.6	Symmetrical, Reciprocal and Asymmetrical Exercises	89
6.6.1	Symmetrical-Reciprocal Exercise	89
6.6.2	Asymmetrical Exercise	91
7	The Upper Extremity	93
7.1	Introduction and Basic Procedures	93
7.2	Flexion–Abduction–External Rotation	97
7.2.1	Flexion–Abduction–External Rotation with Elbow Flexion	101
7.2.2	Flexion–Abduction–External Rotation with Elbow Extension	106
7.3	Extension–Adduction–Internal Rotation	109
7.3.1	Extension–Adduction–Internal Rotation with Elbow Extension	112
7.3.2	Extension–Adduction–Internal Rotation with Elbow Flexion	115
7.4	Flexion–Adduction–External Rotation	119
7.4.1	Flexion–Adduction–External Rotation with Elbow Flexion	122
7.4.2	Flexion–Adduction–External Rotation with Elbow Extension	125

7.5	Extension–Abduction–Internal Rotation	129
7.5.1	Extension–Abduction–Internal Rotation with Elbow Extension	133
7.5.2	Extension–Abduction–Internal Rotation with Elbow Flexion	137
7.6	Thrust and Withdrawal Patterns	141
7.6.1	Ulnar Thrust and Withdrawal	143
7.6.2	Radial Thrust and Withdrawal	145
7.7	Bilateral Arm Patterns	147
7.8	Changing the Patient’s Position	150
7.8.1	Arm Patterns in a Side Lying Position	150
7.8.2	Arm Patterns Lying Prone on Elbows	151
7.8.3	Arm Patterns in a Sitting Position	152
7.8.4	Arm Patterns in the Quadruped Position	153
7.8.5	Arm Patterns in a Kneeling Position	154
8	The Lower Extremity	155
8.1	Introduction and Basic Procedures	155
8.2	Flexion–Abduction–Internal Rotation	159
8.2.1	Flexion–Abduction–Internal Rotation with Knee Flexion	162
8.2.2	Flexion–Abduction–Internal Rotation with Knee Extension	165
8.3	Extension–Adduction–External Rotation	169
8.3.1	Extension–Adduction–External Rotation with Knee Extension	174
8.3.2	Extension–Adduction–External Rotation with Knee Flexion	177
8.4	Flexion–Adduction–External Rotation	180
8.4.1	Flexion–Adduction–External Rotation with Knee Flexion	184
8.4.2	Flexion–Adduction–External Rotation with Knee Extension	187
8.5	Extension–Abduction–Internal Rotation	190
8.5.1	Extension–Abduction–Internal Rotation with Knee Extension	193
8.5.2	Extension–Abduction–Internal Rotation with Knee Flexion	196
8.6	Bilateral Leg Patterns	199
8.7	Changing the Patient’s Position	203
8.7.1	Leg Patterns in a Sitting Position	203
8.7.2	Leg Patterns in a Prone Position	205
8.7.3	Leg Patterns in a Side Lying Position	207
8.7.4	Leg Patterns in a Quadruped Position	208
8.7.5	Leg Patterns in a Standing Position	210

9	The Neck	211
9.1	Introduction and Basic Procedures	211
9.2	Indications	214
9.3	Flexion to the Left, Extension to the Right	215
9.3.1	Flexion/Left Lateral Flexion/Left Rotation	215
9.3.2	Extension/Right Lateral Flexion/Right Rotation	219
9.4	Neck for Trunk	221
9.4.1	Neck for Trunk Flexion and Extension	222
9.4.2	Neck for Trunk Lateral Flexion	223
10	The Trunk	227
10.1	Introduction and Basic Procedures	227
10.2	Chopping and Lifting	230
10.2.1	Chopping	230
10.2.2	Lifting	234
10.3	Bilateral Leg Patterns for the Trunk	238
10.3.1	Bilateral Lower Extremity Flexion, with Knee Flexion, for Lower Trunk Flexion (Right)	238
10.3.2	Bilateral Lower Extremity Extension, with Knee Extension, for Lower Trunk Extension (Left)	242
10.3.3	Trunk Lateral Flexion	246
10.4	Combining Patterns for the Trunk	249
11	Mat Activities	253
11.1	Introduction: Why Do Mat Activities?	253
11.2	Treatment Goals	254
11.3	Basic Procedures	254
11.4	Techniques	254
11.5	Mat Activities	255
11.5.1	Rolling	255
11.5.2	Prone on Elbows (Forearm Support)	268
11.5.3	Side-Sitting	272
11.5.4	Quadruped	278
11.5.5	Kneeling	286
11.5.6	Half-Kneeling	292
11.5.7	From Hands-and-Feet Position (Arched Position on All Fours) to Standing Position and Back to Hands-and-Feet Position	295
11.5.8	Exercise in a Sitting Position	296
11.5.9	Bridging	303
11.6	Patient Cases in Mat Activities	308
12	Gait Training	319
12.1	The Importance of Walking	319
12.2	Introduction: Basics of Normal Gait	319
12.2.1	The Gait Cycle	319

12.2.2	Trunk and Lower Extremity Joint Motion in Normal Gait	320
12.2.3	Muscle Activity During Normal Gait	323
12.3	Gait Analysis: Observation and Manual Evaluation	324
12.4	The Theory of Gait Training	327
12.5	The Procedures of Gait Training	327
12.5.1	Approximation and Stretch	328
12.5.2	Using Approximation and Stretch Reflex	329
12.6	Practical Gait Training	331
12.6.1	Preparatory Phase	331
12.6.2	Standing Up and Sitting Down	338
12.6.3	Standing	341
12.6.4	Walking	348
12.6.5	Other Activities	353
12.7	Patient Cases in Gait Training	357
13	Vital Functions	365
13.1	Introduction	365
13.1.1	Stimulation and Facilitation	365
13.2	Facial Muscles	365
13.3	Tongue Movements	382
13.4	Swallowing	383
13.5	Speech Disorders	384
13.6	Breathing	385
14	Activities of Daily Living	391
15	Glossary	397