
Rehabilitation Therapeutics of the Neurological Training

Wenru Zhao

Rehabilitation Therapeutics of the Neurological Training

Daoyin Technique in Chinese
Medicine



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I spent 4 years' day and night on this book. I spent three Spring Festivals and many weekends in my office. Rehabilitation Therapeutics of the Neurological Training : Daoyin Technique in Chinese Medicine is finally completed. I enjoy myself for a while and am anxious about this book. Although this book is my painstaking effort for almost 20 years and is completed by my group, will it withstand the ordeal of time and tide? Is there any major regret and careless omission? In any case, who is coming will come. Rehabilitation Therapeutics of the Neurological Training: Daoyin Technique:in Chinese Medicine should be presented to the author sooner or later. This book should go through the test of time and tide, should be applied in clinic and should be discussed by the rehabilitation doctors.

More than 10 years' clinical application proved that the therapeutic effect is good and the method is accepted by many patients, which make me feel comfortable. All these results give me courage. At least, this book serves as a modest spur to induce someone to come forward with his valuable. My purpose is to revive the old rehabilitation technique of Chinese nation to improve life quality of the disabled. I want to devote myself to rehabilitation medicine service. This book should receive the inspection and judgement of specialists, rehabilitation doctors, all sectors of society and the successors. This book may be only a start. After practice, modification, supplement and perfection, this book can be used to serve the disabled and benefit all mankind. That's what I want to and am happy to see.

When this book is going to be published, the most urgent thing I want to do is to thank the hospitals, companies and people that support and help me in the development of rehabilitation technique of neurological training and in the days of book writing. Since 2001, I came back to China and Xuanwu Hospital,

Beijing Municipal Rehabilitation Center, Tongren Hospital and National Research Center for Rehabilitation Technical Aids Affiliated Rehabilitation Hospital provide affordable conditions for the development of this technique, which play an important role in the early incubation and development of rehabilitation technique of neurological training. I want to thank the groups in different phases who don't give me up in the difficulties and who follow me and give up good pay and working condition regardless of hardship. They contribute to the development and progress of rehabilitation technique of neurological training and the development and application of rehabilitation enterprise.

It is estimable that Beijing Xingchengwanyou Science and Technology Ltd is the rehabilitation technological achievement transformation of neurological training. Since 2003, the company is led by general manager, senior engineer Hongquan Su, to raise money, prepare place, buy equipment and turn my thoughts into corollary equipment at any cost, because they are willing to try their best to develop corollary equipment of our own rehabilitation technique of functional training with proprietary intellectual property rights and contribute to the formation and industrialization development of this technique.

I want to thank the hospitals that recruit this technique. They take risks to recruit rehabilitation technique of neurological training for the local patients at first, broaden the clinical application range of this technique, and accelerate the pace of clinical verification and improved development. I want to thank the rehabilitation doctors, news media, all sectors of society, the patients and their family who accept and support rehabilitation technique of neurological training. They give me the courage and power to do further research on the rehabilitation technique of neurological training. I want to thank my family as well who support and understand me in these years.

With this, I realize that if neurological training has a little effect and contribution on the development and progress of rehabilitation medicine, it is the results of everyone's effort. Perhaps, the publishment of this book is only the start of the research work. My group and I will devote ourselves to the renaissance of rehabilitation technique in traditional Chinese medicine and progress of rehabilitation enterprise.

Beijing, China
28 July 2013

Preface

During the years I worked as an orthopedist specializing in the treatment and functional rehabilitation of spinal cord injury, I had the honor of studying in the department of physics and biophysics at the University of Salzburg for three years and then in the orthopedics and rehabilitation department of Jackson Memorial Medical Center at the University of Miami for three years. When I studied in the USA under the guidance of Professor Bernard S Brucker, I was brought into contact with the rehabilitation technique of electromyographic biofeedback and was immediately impressed. Since I returned to China in 2001, I have been dedicating myself to clinical practice, teaching, and research in the field of rehabilitation.

During the process of undertaking clinical rehabilitation, teaching, and research work, I truly realized the value and importance of rehabilitation work and recognized that rehabilitation medicine requires advanced technology and a wide breadth of knowledge. I realized that rehabilitation is a subject with practical value. When medicines, surgery, and other methods cannot recover lost motor function after an injury to the central nervous system, the method of rehabilitation training and rehabilitation medical engineering can remodel the disabled who have lost their self-help ability into those who have physical autonomy and are capable of taking care of themselves and returning to society. Rehabilitation medicine is a complicated and difficult cross-discipline subject, but it is a great way to help remodel people. All these aspects of rehabilitation medicine give me the passion and confidence to undertake rehabilitation medicine work.

I spent nineteen years, including six years in an elementary stage abroad and thirteen years' exploration at home, to develop a new rehabilitation technique that combines traditional Chinese and Western medicine. This technique's theoretical bases are CNS plasticity and functional reorganization and its training methods are neural potential development, motor program reestablishment, and motor pattern remodeling. The basic technique applied in these methods is a six-step Daoyin technique in traditional Chinese medicine of guiding collaterals through meridians to improve neural potential and recover functions of the nervous system; this process is also referred to as neurological training. Nine anatomical systems are controlled by nerves. Therefore, this technique can be widely applied. At present, using the six-step Daoyin technique, a series of therapeutic methods and corollary equipment have been in gradual development, which is called the rehabilitation therapy system of neurological training.

In the process of writing this book, I was supported by rehabilitation groups of neurological training and all sectors of society. I deliberated over the content of this book, simplified it by cutting out the superfluous, and strove for accuracy. However, my knowledge is limited and there may be some mistakes, so that I hope the reader will help me rectify them.

I hope this book can serve as a modest motivator to spur someone to come forward with their valuable contributions, so they can then activate the enthusiasm of medical workers for further exploration in this technique in order to improve it. In this way, the Daoyin technique from traditional Chinese medicine can then be spread worldwide.

Beijing, China
August 2013

Wenru Zhao


Acknowledgments

I spent four years, day and night, on this book. I spent three Spring Festivals and many weekends in my office. Now, *Rehabilitation Therapeutics of the Neurological Training: Daoyin Technique in Chinese Medicine* is finally completed. I enjoyed myself for a while and am anxious about this book. Although this book is the result of my painstaking effort for almost twenty years and is completed by my group, will it withstand the ordeal of time? Are there any mistakes or careless omissions? In any case, whatever happens, happens. *Rehabilitation Therapeutics of the Neurological Training: Daoyin Technique in Chinese Medicine* should be presented to the reader sooner or later. This book should go through the test of time, should be applied in clinic, and should be discussed by the rehabilitation doctors.

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When this book is published, the most important thing I want to do is to thank the hospitals, companies, and people that supported and helped me while I was developing this technique and during my days of book writing. In 2001, I returned to China. Xuanwu Hospital, Beijing Municipal Rehabilitation Center, Tongren Hospital, and the National Research Center for Rehabilitation Technical Aids Affiliated Rehabilitation Hospital provided affordable conditions for the development of this technique, which played an important role in the early incubation and development of rehabilitation technique of neurological training. I want to thank the groups in different phases who didn't give up on me despite the difficulties and who followed me and gave up good pay and working conditions regardless of hardship. They contributed to the development and progress of this rehabilitation technique.

My special thanks go to Beijing Xingchengwanyou Science and Technology Ltd., the transformation base for our technical achievement in

neurological training and rehabilitation. Since 2003, the company has been led by general manager and senior engineer Hongquan Su. This company helped to raise money, prepare places, buy equipment, and turn my thoughts into corollary equipment at any cost, because they are willing to try their best to develop equipment for rehabilitation technique of functional training with proprietary intellectual property rights and contribute to the formation and industrialization development of this technique.

I want to thank the hospitals that adopted this technique. They took risks to adopt this technique for local patients at first, broaden the clinical application range of this technique, accelerate the pace of clinical verification, and contribute improvements and developments. I want to thank the rehabilitation doctors, news media, all sectors of society, the patients and their families who accepted and supported this technique. They gave me the courage and power to do further research on this rehabilitation technique of neurological training.

I want to thank my family as well, who has supported and understood me all these years.

With this, I realized that if neurological training has some impact or contribution to the development and progress of rehabilitation medicine, it is the result of everyone's effort.

Perhaps, the publication of this book is only the start of this research. My group and I will devote ourselves to the renaissance of rehabilitation technique in traditional Chinese medicine and progress of rehabilitation enterprise.

Contents

1	Basic Theory of Neurological Training Rehabilitation	1
1.1	Abstract	1
1.1.1	The Mechanism of Recovering the Lost Motor Functions After CNS Injuries	1
1.1.2	The State of Applied Rehabilitation Techniques at Domestic and Overseas at Present	6
1.2	Theoretical Basis of Neurological Training Rehabilitation	13
1.2.1	CNS Potential Development	13
1.2.2	Motor Program Reconstruction	15
1.2.3	Motor Pattern Remodeling	18
1.3	The Principle and History of Daoyin Technique in Traditional Chinese Medicine (TCM)	20
1.3.1	The Principle of Daoyin Technique in Traditional Chinese Medicine	20
1.3.2	The History of Daoyin Technique in Traditional Chinese Medicine	20
1.3.3	The Reason of Endangered Daoyin Technique in Traditional Chinese Medicine	23
1.3.4	Basic Ideas of Renaissance of Daoyin Technique in Traditional Chinese Medicine	24
1.4	Electromyographic Biofeedback	25
1.4.1	The Development History of Electromyographic Biofeedback Technique	25
1.4.2	The Principle and Clinical Application of Electromyographic Biofeedback Technique	25
1.4.3	Equipment Types of Myoelectric Biofeedback	29
1.4.4	Advantages and Shortages of Myoelectric Biofeedback Technology	30
	References	31
2	The Formation of Neurological Training Rehabilitation System	33
2.1	The Modernization of Daoyin Technique in Traditional Chinese Medicine	33
2.1.1	Theoretical Foundation of the Modernization of Daoyin Technique in Traditional Chinese Medicine	33

2.1.2	The Formation and Specific Operational Approach of Six-Step Daoyin Technique	34
2.1.3	Controlled Clinical Trial of Six-Step Daoyin Technique	44
2.1.4	Clinical Indications and Cautions of Six-Step Daoyin Technique	47
2.1.5	The Application of Six-Step Daoyin Technique in Physical Therapy and Occupational Therapy	48
2.1.6	The Application of Six-Step Daoyin Technique in Other Trainings	53
2.2	Therapeutic Methods of Neurological Training Rehabilitation	54
2.2.1	Acquisition of Motor Program Signal: Experimental Study on the Source of Surface Electromyogram Signal	56
2.2.2	The Role of “Objective and Motive” Mechanism in the Development of Human Potentials	63
2.2.3	The Display of Effect of Objective Indicators in Six-Step Daoyin Technique	64
2.2.4	The Origin and Definition of Neurological Training	66
2.2.5	Rectification of Abnormal Motor Program and Consolidation of Normal Motor Program	67
2.2.6	Indications, Contraindications and Cautions of Rehabilitation Therapeutics Methods of Neurological Training	76
2.3	The Type and Methods of Establishing Coordinated Movement Procedure	77
2.3.1	The Significance of Establishing the Coordinated Movement Procedure in Recovering Coordinated Movement	77
2.3.2	The Type and Methods of Reestablishing Coordinated Movement Procedure	78
2.3.3	Indications, Contraindications and Cautions of Reestablishing Multi-joint Coordinated Motor Program	80
2.3.4	Clinical Application Study on Mechanism of Rehabilitation Therapeutics of Neurological Training	81
	References	87
3	Neurological Training Methods of Developing Neural Potential	89
3.1	The Basis of Neural Potential	89
3.1.1	Theoretical Basis of Developing Potential	90
3.1.2	The Condition of Developing Potential	92
3.2	The Application of Six-Step Daoyin Technique in Potential Development	95
3.2.1	Clearing and Activating the Channels and Collaterals of Daoyin Technique	95

3.2.2	Classification of Potential Development Training	98
3.3	Clinical Indications and Cautions of Potential Development	100
3.3.1	Clinical Indications and Cautions of Upper Limbs Potential Development Training	100
3.3.2	Clinical Indications and Cautions of Potential Development Training in Trunk.	101
3.3.3	Clinical Indications and Cautions of Potential Development Training in Lower Limbs.	102
3.4	Clinical Experiment of Potential Development	102
3.4.1	The Development and Clinical Application of Potential Development Training Equipment of Upper Limbs	102
3.4.2	The Development and Clinical Application of Potential Development Training Equipments of Lower Limbs	105
	References.	109
4	Comprehensive Application of Rehabilitation Technique of Neurological Training.	111
4.1	The Formation and Prevention Mechanism of Abnormal Motor Pattern	112
4.1.1	The Formation Mechanism of Abnormal Motor Pattern	112
4.1.2	The Effect of Abnormal Motor Pattern on Physical Function	113
4.1.3	Common Classification of Abnormal Motor Pattern	114
4.1.4	The Mechanism of Prevention and Rectification of Abnormal Motor Pattern	118
4.1.5	Rehabilitation Method Used for Rectifying Abnormal Motor Pattern at Home and Abroad at Present	121
4.2	Three Stages of Rehabilitation Training Method in Neurological Training	122
4.2.1	The Division, Principal Method and Mechanism of Three Stages in Neurological Training	122
4.2.2	Basic Methods and Clinical Indications in All Stages of Neurological Training	128
4.2.3	The Training Time and Therapy Course of Three-Stage of Neurological Training Therapy. . . .	131
4.2.4	Flexible Use of Three-Stage Neurological Training Therapy	131
4.2.5	Clinical Verifications of Three-Stage Neurological Training Therapy	132
4.2.6	Clinical Application Experiences in Three-Stage Rehabilitation Method of Neurological Training: A Philosophical Method with Dialectics and Natural Law.	136
4.3	Three-Stage Associated Equipment and Clinical Verification of Neurological Training	140

4.3.1	Abnormal Gait Rectification Weight Support Treadmill Training Device and Clinical Verification . .	140
4.3.2	Clinical Verification of Lower Limbs Motor Pattern Remodeling Trainer	146
4.3.3	The Design Principle and Clinical Verification of Limb Multifunctional Training Box	152
4.3.4	Development and Clinical Verifications of Controlled-Release Force Ankle-Foot Orthosis. . . .	156
	References.	159
5	Training Method and Equipment of Virtual Neurological Training.	161
5.1	The Mechanism and Significance of Virtual Training Methods.	161
5.1.1	The Generation of Ideas of Virtual Neurological Training	161
5.1.2	Background of Related Techniques: Virtual Reality . .	163
5.1.3	Research Purpose and Meaning of Virtual Neurological Training System	166
5.2	Composition and Training Method of Virtual Neurological Training System.	167
5.2.1	The Composition of Virtual Neurological Training System.	167
5.2.2	Training Method of Virtual Neurological Training System.	170
5.3	The Mechanism and Function of Virtual Neurological Training System.	173
5.3.1	The Mechanism of Virtual Neurological Training System.	173
5.3.2	The Function of Virtual Neurological Training System.	174
5.4	Clinical Experiment of Virtual Neurological Training System.	175
5.4.1	Clinical Data	175
	Reference	181
6	Rehabilitation Methods of Neurological Training in Special Diseases.	183
6.1	Rehabilitation Methods of Neurological Training of Recovering Motor Function in the Patients with Severe Unconsciousness	183
6.1.1	Theoretical Foundation of Motor Function Recovery Training in the Patients with Severe Unconsciousness	183
6.1.2	The Introduction of Severe Unconsciousness	185
6.1.3	Compulsive Active Movement Method of Neurological Training of Recovering Motor Function of the Patients with Severe Disturbance of Consciousness	187

6.2	Rehabilitation Methods of Neurological Training of Muscle with Zero Myodynamia	191
6.2.1	The Mechanism of Rehabilitation Training of Neurological Training of Zero Myodynamia.	191
6.2.2	Training Methods of Zero Myodynamia	192
6.2.3	Clinical Research of Neurological Training Therapy of Zero Myodynamia.	194
6.3	Beauty Method of Neurological Training	198
6.3.1	Active Movement of Facial Muscle Training Method of Neurological Training	199
6.3.2	Active Movement Training Method of Facial Muscle of Virtual Neurological Training.	200
6.3.3	Manual Active Movement Training Method of Facial Muscle of Neurological Training	200
6.3.4	Self-Training Method of Facial Muscle of Neurological Training	200
6.3.5	Facial Physiotherapy	201
6.4	Active Movement Conceptions and Methods of Aged Care: New Concept of Modern Aged Healthcare.	201
6.4.1	Active Movement.	202
6.4.2	Assisted Active Movement Training	204
6.4.3	Passive Active Movement Training	204
6.4.4	Compulsive Active Movement Training	206
6.4.5	Self-Exercise Method of Neurological Training	207
6.4.6	Cautions	207
	Reference	208
7	Function Assessment and Therapeutic Schedule of Neurological Training Rehabilitation	209
7.1	The Main Methods of Rehabilitation Functional Assessment.	209
7.1.1	The Principle of Neurological Training Rehabilitation Evaluation.	209
7.1.2	The Main Content and Assessment Stages of Rehabilitation Evaluation	211
7.1.3	Assessment Method.	212
7.2	The Formulation of Rehabilitation Therapy of Neurological Training Schedule	218
7.2.1	The Composition of Combination Therapy Group	218
7.2.2	Basic Principle of Formulating Therapy Schedule	219
7.2.3	The Implementation and Adjustment of Therapeutic Schedule	225
7.2.4	The Role of the Patients and Their Family in Rehabilitation.	228
	References.	231

8	Integrated Method of “Physiotherapy-Physical Exercise and Self-Exercise”	233
8.1	The Reason Why Bony Joint and Muscular Painful Diseases Are Difficult to Be Cured and Easy to Relapse.	233
8.1.1	Soft Tissue Adhesion After Damages Is Not Lessened Effectively.....	233
8.1.2	The Factors That Induce Soft Tissue Inflammation of Joint and Muscle Aren’t Rectified.....	234
8.1.3	Single Therapeutic Method Without Comprehensive Therapeutic Method for Pathogenesis and Complication.....	235
8.2	Neurological Training Rehabilitation for Osteoarthritis.....	236
8.2.1	Early Stage.....	236
8.2.2	Middle Stage.....	236
8.2.3	Late Stage.....	236
8.2.4	Physiotherapy.....	237
8.2.5	Method and Mechanism of Physical Exercise Therapy.....	243
8.2.6	The Method and Effect of Self-Exercise.....	251
	References.....	264
9	The Application of Rehabilitation Medical Engineering in Neurological Training	265
9.1	The Research and Development of Preventive Orthotics.....	265
9.1.1	Semi-Finished Product Macromolecule Orthotics Material.....	265
9.1.2	Former of Orthopedic Brace.....	269
9.1.3	Retainer of Joint in Functional Position.....	272
9.1.4	Convenient Turning–Over Device to Prevent Pressure Sores.....	277
9.2	The Development of Orthopedic Orthotics.....	283
9.2.1	Ankle Orthotics of Controlled-Release Force.....	284
9.2.2	Antispasmodic Dynamic Joint Position Retainer.....	286
9.3	The Development of Functional Assistive Device.....	290
9.3.1	Elastic Band Orthosis of Lower Limbs.....	290
9.3.2	Assistive Walking Device of Complete High Paraplegia.....	291
	References.....	300
10	Rehabilitation Therapy of Neurological Training of Hemiplegia	301
10.1	Dysfunction Type and Rehabilitation Stage of Hemiplegia.....	302
10.1.1	Dysfunction Type of Hemiplegia.....	302
10.1.2	Rehabilitation Stage of Hemiplegia.....	303
10.2	Rehabilitation Therapy of Hemiplegia.....	305
10.2.1	Rehabilitation Therapy in Bed.....	305
10.2.2	Rehabilitation Therapy Out of Bed.....	312
10.3	Solutions to Some Common Problems.....	320

10.3.1	Rehabilitation Method of Neurological Training of Zero Myodynamia	320
10.3.2	The Therapy of Myospasm	320
	References.....	326
11	Rehabilitation Therapy of Neurological Training of Facial Paralysis	327
11.1	Main Dysfunctions of Facial Paralysis	327
11.1.1	Pathogenesis and Dysfunction Characteristics of Facial Paralysis	327
11.1.2	Functional Assessment Method of Facial Paralysis	329
11.2	The Mechanism and Method of Rehabilitation Therapy of Facial Neuritis.....	329
11.2.1	The Mechanism of Rehabilitation Therapy of Facial Neuritis.....	329
11.2.2	The Method of Rehabilitation Therapy of Facial Neuritis.....	332
11.3	Rehabilitation therapy in sequelae phase.	344
11.3.1	Clinical Therapeutic Effect Observation of Peripheral Facial Paralysis Treated by Rehabilitation of Neurological Training	349
	References.....	354
12	Rehabilitation Therapy of Neurological Training of Cerebral Palsy in Children	357
12.1	The Characteristics of Cerebral Palsy	357
12.1.1	Characteristics and Types of Cerebral Palsy in Children.....	357
12.1.2	Complications and Secondary Diseases	358
12.2	Assessment Method of Cerebral Palsy in Children.....	358
12.3	The Formulation of Therapeutic Schedule.....	362
12.3.1	Rehabilitation Therapy Principle of the Baby and Infant with Cerebral Palsy	362
12.3.2	Rehabilitation Therapy Schedule and Specific Method of the Baby and Infant with Cerebral Palsy	363
12.3.3	Amount of Training of Children with Cerebral Palsy	378
12.3.4	Training and Therapy in Other Aspects.....	379
12.4	Case Report: The Rehabilitation Process of an Elder Child with Cerebral Palsy	382
	References.....	385
13	Rehabilitation Therapy of Neurological Training of Paraplegia	387
13.1	The Main Dysfunctions of Spinal Cord Injury	387
13.1.1	Classification and Diagnosis of Spinal Cord Injury	387

13.1.2	The Common Clinical Syndrome After Spinal Cord Injury	389
13.1.3	The Main Dysfunctions Induced by Spinal Cord Injury	391
13.1.4	Functional Assessment of Spinal Cord Injury	391
13.2	Spinal Cord Injury Rehabilitation Therapy of Neurological Training	392
13.2.1	Early Rehabilitation Therapy of Spinal Cord Injury	392
13.2.2	Rehabilitation Therapy of Neurological Training of the Patients with Spinal Cord Injury in Convalescence	398
13.3	The Prevention and Treatment of Common Complications of Paraplegia	406
13.3.1	Dysfunction of Urine and Stool and Rehabilitation Therapy	406
13.3.2	Treatment of Pressure Sores	406
13.3.3	The Common Cardiovascular Problem and Rehabilitation After Spinal Cord Injury	408
13.3.4	Deep Vein Thrombosis of Lower Limbs	409
13.3.5	Rehabilitation of Thermoregulation Disorder	411
13.3.6	Tardive Neurological Deterioration	412
13.4	Clinical Application of Neurological Training for Paraplegia	412
13.4.1	Observation of Therapeutic Effects of Chronic Cervical Cord Injury	412
13.4.2	Multiple-Course Observation of Curative Effect of Treating Obsolete Cervical Cord Injury	415
13.4.3	Therapeutic Effect Analysis of Muscles with Zero Myodynamia in the Patients with Obsolete Cervical Cord Injury	421
	References	425
14	Rehabilitation Therapy of Neurological Training of Pulmonary Dysfunction	427
14.1	Respiratory Movement and Pulmonary Function	427
14.1.1	Pulmonary Ventilation Function	427
14.1.2	Evaluation of Pulmonary Ventilation Function	430
14.2	Pulmonary Motor Dysfunction and Rehabilitation Therapy of Neurological Training	431
14.2.1	Assessment of Pulmonary Motor Dysfunction	431
14.2.2	Rehabilitation Therapy of Neurological Training	432
14.3	Rehabilitation Methods of Keeping Fluency of Respiratory Tract	438
14.3.1	The Control and Adjustment of Cough	438
14.3.2	Postural Drainage	438
14.3.3	Patting and Chattering to Excrete Sputum	439
14.3.4	Aerosol Inhalation Therapy	439

14.3.5	Mucus Lytic Agent	439
14.4	Development and Clinical Application of Pulmonary Function Exercise Device	439
14.4.1	Design Principle of FG-01 Pulmonary Function Exercise Device	439
14.4.2	The Therapeutic Effect of FG-01 Pulmonary Function Exercise Device on Pulmonary Function Rehabilitation of the Patients with Pulmonary Fibrosis	442
	References.	446
15	Rehabilitation Therapy of Neurological Training of Cognitive Disorder	447
15.1	The Concept of Cognitive Disorder and the Mechanism of Memory Formation	447
15.1.1	Basic Concept of Cognitive Disorder	447
15.1.2	The Mechanism of Memory Formation	448
15.2	Rehabilitation Therapy of Neurological Training of Cognitive Disorder.	450
15.2.1	Assessment of Cognitive Disorder	450
15.2.2	Rehabilitation Therapy of Cognitive Disorder	453
15.2.3	Cognitive Training Device Development of Neurological Training	462
	Reference	466
16	Rehabilitation Therapy of Neurological Training of Swallowing Dysfunction	467
16.1	The Mechanism of Swallow and Dysphagia	467
16.1.1	The Mechanism of Swallow	467
16.1.2	Dysphagia	471
16.2	Rehabilitation Therapy of Swallowing Disorder	472
16.2.1	Principle and Method of Rehabilitation of Neurological Training of Swallowing Disorder.	472
16.2.2	Other Common Rehabilitation Training Methods.	476
	References.	480
17	Rehabilitation Therapy of Neurological Training of Sphincter Dysfunction	481
17.1	Micturition Dysfunction.	481
17.1.1	Innervation of Micturition.	481
17.1.2	Classification of Micturition Dysfunction.	483
17.1.3	Assessment Method of Micturition Dysfunction	484
17.1.4	Rehabilitation Therapy of Micturition Dysfunction.	484
17.2	The Mechanism of Defecation Dysfunctions	492
17.2.1	The Process of Forming Defecation Reflex.	492

17.2.2	Pathogenesis and Classification of Defecation Dysfunctions	492
17.2.3	Rehabilitation Therapy of Defecation Dysfunctions	495
	References	502
18	Rehabilitation Therapy of Neurological Training of Visual Impairment	503
18.1	Visual Structure and the Mechanism of Visual Formation	503
18.1.1	Visual Structure	503
18.1.2	The Mechanism of Visual Formation	505
18.2	Visual Impairment	507
18.2.1	Ocular Abnormal Refraction	507
18.2.2	Myopic Eye	508
18.2.3	Presbyopia	515
18.2.4	Presbyopia	519
18.3	Clinical Application of Rehabilitation Training of Ciliaris in Pupil with Early Myopia	522
18.3.1	Materials and Methods	522
18.3.2	Observational Index	522
18.3.3	Results	523
18.3.4	Discussion	524
	References	526
19	Corollary Equipment of Rehabilitation Training of Neurological Training	527
19.1	The Guiding Ideology of Developing Corollary Equipment of Rehabilitation Training	527
19.1.1	The Implication of Rehabilitation Training Equipment	527
19.1.2	Development Mechanism of Corollary Equipment of Rehabilitation Training of Neurological Training	528
19.2	The Major Function and Classification of Corollary Equipment of Neurological Training	530
19.2.1	Major Function	530
19.2.2	The Classification of Rehabilitation Corollary Equipment of Neurological Training	532
19.3	Introduction of Partial Corollary Equipment of Rehabilitation of Neurological Training	535
19.3.1	Training Appliance	535
19.3.2	Training Device	548
19.3.3	Training Device	559
19.3.4	Training Robot	571
	References	575

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Wenru Zhao was born in November 1951 in the village of North Guanzhuang, located in Royang County of Hebei Province. He graduated from the medicine department of North China Coal Medical University in 1976. After graduation, he worked in the surgery department of his university's affiliated hospital. In 1986, he became a graduate student at Beijing Tuberculosis and Thoracic Neoplasms Institute, earning a master's degree in surgery. From 1995 to 2001, he went to Europe and America

as a senior visiting scholar, which started his journey in the fields of clinical rehabilitation, teaching, and research.

He was the first president of the National Research Center for Rehabilitation Technical Aids Affiliated Rehabilitation Hospital. After being relieved of his office, he became the President Emeritus of this hospital and Chief Physician in rehabilitation. He was head of the department of functional therapy (rehabilitation) at Capital Medical University Xuanwu Hospital, vice president and director of the Rehabilitation Center of Neurological Training at Beijing Xishan Hospital, and the director of the Rehabilitation Center of Neurological Training of Capital Medical University Tongren Hospital. He worked in clinical practice, rehabilitation diagnosis and therapy, medical teaching, and research for 37 years. He founded the rehabilitation therapy system of neurological training. He is the chairman of a specialized committee called the Rehabilitation Medicine of Beijing Combination Society of Traditional Chinese and Western Medicine. He was a winner of a Prominent Achievement Award for master's degree recipients by the State Education Commission and Academic Degrees Committee of the State Council. Currently, he is involved in the National Key Technology R&D Program's "Three-stage Method and Corollary Equipment Research of Rehabilitation of Neurological Training of Motor Functions of Hemiplegic Lower Limbs."

Introduction

Traditional rehabilitation methods developed in the middle period of last century such as Bobath, Rood, Brunnstrom, PNF and motor relearning program (MRP), played an enlightened and foundation effect on rehabilitation in the long history of rehabilitation. However, the therapeutic effect is influenced because these methods are mainly passive movements, primary reflex and afferent stimulus. Therefore, it is extremely urgent to study the rehabilitation method that is better in accordance with the mechanism of motor functional recovery after CNS injury.

Neural potential development is the basis of promoting plasticity and functional reorganization of central nervous system. Six-step Daoyin technique in traditional Chinese medicine of guiding collaterals through meridians of complete active movement is accordance with rehabilitation method to develop brain potential. Daoyin feedback technique is an important method to reestablish motor program with a purpose through goal and motive mechanism and guided motor program signal real-timely detected and displayed. Effective restriction of unnecessary joint motion in limbs movements is the important segment to remodel motor pattern and is an essential process of transforming developed potential and reestablished motor program into actual motor function and life ability. The three-stage rehabilitation method of neurological training is the specific manifestation of clinical standard application of technique. A series of corollary equipment developed according to the methods is the important measures to implement the method correctly and realize the therapeutic effect. Accurate rehabilitation assessment, confirmation of main obstacles, formulation and selection of overall goal of rehabilitation, principle and specific method are essential rehabilitation strategy and tactics to obtain anticipated training effect.

This book is mainly used for clinical application and is to introduce basic mechanism, specific method and development of rehabilitation technique of neurological training. This book emphasizes on clinical indications, contraindications, announcements and rehabilitation dedicated device of neurological training. This book use easy, practical, understandable and simple description and illustration to analyze rehabilitation therapeutic technique of neurological training from the angle of integrated Chinese and Western medicines in order to make it practical. It is not only suitable for rehabilitation doctors and therapists in big hospitals, but also suitable for the doctors in community and village. For the teachers and students in medical school and physicians in other departments, the book has certain reference value. Therefore,

rehabilitation medicine should run through therapy of all clinical departments and diseases.

We hope this book can serve as a modest spur to induce someone to come forward with his valuable contributions to encourage medical staffs, especially staffs in rehabilitation medicine to dig and learn the old rehabilitation technique in traditional Chinese medicine and its modern development in order to promote the renaissance of old rehabilitation technique and contribute to the development of rehabilitation medicine in worldwide.

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