

CONTENTS

Preface	ix
A Tribute	xi
Acknowledgments	xiii

PART I The Scientific Basis of Muscle Imbalance 1

CHAPTER 1	Structural and Functional Approaches to Muscle Imbalance 3
	Intrinsic Versus Extrinsic Function 4
	Muscle Balance in Function and Pathology 5
	Muscle Imbalance Paradigms 7
	Summary 11
CHAPTER 2	The Sensorimotor System 13
	Sensorimotor Hardware and Software 13
	Neuromuscular Aspects of Postural Stability and Joint Stabilization 19
	Pathology in Proprioception 22
	Summary 25
CHAPTER 3	Chain Reactions 27
	Articular Chains 28
	Muscular Chains 30
	Neurological Chains 37
	Summary 42
CHAPTER 4	Pathomechanics of Musculoskeletal Pain and Muscle Imbalance 43
	Pathology of Musculoskeletal Pain 43
	Pathomechanics of Muscle Imbalance 46
	Causes of Muscle Tightness and Weakness 49
	Janda's Classification of Muscle Imbalance Patterns 52
	Summary 55

PART II Functional Evaluation of Muscle Imbalance . . . 57

CHAPTER 5	Posture, Balance, and Gait Analysis	59
	Muscle Analysis of Standing Posture	59
	Evaluation of Balance	71
	Evaluation of Gait	72
	Summary	75
CHAPTER 6	Evaluation of Movement Patterns	77
	Janda's Basic Movement Patterns	77
	Additional Movement Tests Complementary to Janda's Tests	86
	Selected Manual Muscle Tests	89
	Summary	91
CHAPTER 7	Muscle Length Testing	93
	Muscle Length Assessment Technique	94
	Lower-Quarter Muscles	95
	Upper-Quarter Muscles	105
	Hypermobility	109
	Summary	110
CHAPTER 8	Soft-Tissue Assessment	111
	Characteristics of Trigger Points	112
	Assessment of Trigger Point or Tender Point Chains	116
	Scars	123
	Myofascia	123
	Summary	123

PART III Treatment of Muscle Imbalance Syndromes . . . 125

CHAPTER 9	Normalization of Peripheral Structures	127
	Central Indirect Techniques	128
	Local Direct Techniques	130
	Summary	136
CHAPTER 10	Restoration of Muscle Balance	137
	Factors Contributing to Muscle Weakness	138
	Additional Treatment Techniques for Muscle Weakness	139
	Factors Contributing to Muscle Tightness	146
	Additional Treatment Techniques for Muscle Tightness	147
	Summary	155

CHAPTER 11 Sensorimotor Training 157

Role of Sensorimotor Training in Janda's Treatment 158

Sensorimotor Training Components 160

Sensorimotor Training Progression 163

Summary 172

PART IV Clinical Syndromes 173**CHAPTER 12 Cervical Pain Syndromes 175**

Regional Considerations 175

Common Pathologies 176

Case Study 189

Summary 190

CHAPTER 13 Upper-Extremity Pain Syndromes 191

Regional Considerations 191

Assessment 195

Common Pathologies 199

Case Study 210

Summary 211

CHAPTER 14 Lumbar Pain Syndromes 213

Regional Considerations 213

Common Pathologies 216

Assessment 218

Management of Low Back Pain Syndromes 221

Case Study 223

Summary 226

CHAPTER 15 Lower-Extremity Pain Syndromes 227

Regional Considerations 227

Assessment 229

Common Pathologies 232

Case Study 241

Summary 245

References 247

Index 289

About the Authors 297