

Contents

	Introduction	xv
	Acknowledgments	xix
Section I	Overview of Low Back Pain	
Chapter 1	Types of Pain	3
	Nociceptive Pain	3
	Neuropathic Pain	4
	Acute Pain	6
	Chronic Pain	7
	Pain and Emotion	7
	Summary Points	8
Chapter 2	Low Back Anatomy	10
	The Spinal Column	10
	Low Back Musculature	14
	Pain-Sensitive Structures	16
	Anatomical versus Physiologic Basis of Pain	18
	Summary Points	19
Chapter 3	Clinicians Who Treat Low Back Pain	21
	Physicians	21
	Anesthesiologist	22
	Family Medicine Physician	22
	Internist	22
	Neurologist	23
	Neurosurgeon	23
	Orthopedic Surgeon	24

	Pain Medicine Specialist	24
	Physiatrist	24
	Psychiatrist	25
	Radiologist	25
	Rheumatologist	25
	Multispecialty Pain Center	25
	Non-Physician Clinicians	26
	Nurse	26
	Physical Therapist	26
	Physician Assistant	26
	Psychologist	27
	Complementary and Alternative Medicine	27
	Acupuncturist	27
	Biofeedback Specialist	28
	Chiropractor	28
	Massage Therapist	29
	Reflexologist	29
	Summary Points	29
Chapter 4	Imaging and Diagnostic Studies . . .	30
	Radiographs	30
	Computed Tomography Scan	32
	Magnetic Resonance Imaging	33
	Myelogram	33
	Discogram	35
	Ultrasound	35
	Bone Scan	36
	Electromyography and Nerve Conduction Studies	36
	Summary Points	37
Chapter 5	Medications	39
	Food and Drug Administration Approval	39
	Nonsteroidal Anti-Inflammatory Drugs	40
	How They Work	40

Side Effects	41
Indications in Pain	
Management	42
Commonly Prescribed Nonsteroidal	
Anti-Inflammatory Drugs	43
Muscle Relaxants	47
How They Work	47
Side Effects	47
Indications in Pain	
Management	48
Commonly Prescribed Muscle	
Relaxants	48
Narcotic Analgesics	52
How They Work	52
Side Effects	53
Indications in Pain	
Management	53
Commonly Prescribed	
Narcotic Analgesics	55
Antidepressants	58
How They Work	58
Side Effects	59
Indications in Pain	
Management	61
Commonly Prescribed	
Antidepressants: Tricyclic	
Antidepressants	61
Selective Serotonin Reuptake	
Inhibitors	63
Serotonin-Norepinephrine	
Reuptake Inhibitors	64
Other Antidepressants	65
Anticonvulsants	66
How They Work	66
Side Effects	67
Indications in Pain	
Management	67

	Commonly Prescribed	
	Anticonvulsants	67
	Topical Analgesics	71
	Corticosteroids	71
	Summary Points	72
Chapter 6	Non-Surgical Treatments	73
	Hands-On Treatment and Exercise . .	73
	Physical Therapy	73
	Acupuncture	80
	Massage Therapy	80
	Spinal Manipulation	82
	Biofeedback	84
	Relaxation and Meditation . . .	85
	Exercises	86
	Therapeutic Injections	91
	Trigger-Point Injections	91
	Epidural Injections	92
	Selective Nerve Root Injection (Trans-Foraminal Injection) . .	94
	Facet Injections	95
	Intradiscal Electrothermal Therapy	97
	Summary Points	98
Chapter 7	Surgical Treatments	99
	Medical Risks of Surgery	99
	Laminectomy and Laminotomy . .	100
	Discectomy and Microdiscectomy	100
	Spinal Fusion	104
	Lumbar Disc Replacement	104
	Rehabilitation Risks Following Surgery	106
	Return to Full Activity	107
	Pain Risks following Surgery . . .	107
	Spinal Cord Stimulation	108
	Morphine Pump	109

	Summary Points	111
Chapter 8	Mind-Body and Integrative Strategies.	112
	Mind-Body	112
	Emotions, Chemicals and Receptors	113
	Emotional Processing and Chronic Pain.	113
	Example 1.	114
	Example 2.	116
	Interpreting Mind-Body Examples .	120
	Summary Points	121
Section II	Low Back Pain Syndromes	
Chapter 9	Lumbar Strain.	125
	Clinical Presentation	125
	Cause of Lumbar Strain	125
	Physical Examination	126
	Imaging and Diagnostic Studies . .	126
	Treatment Considerations.	126
	Nonsurgical	126
	Surgical.	127
	Mind-Body Considerations.	127
	Illustrative Case	127
	Author's Note	129
	Summary Points	129
Chapter 10	Lumbar Disc Herniation.	130
	Clinical Presentation	130
	Cause of Lumbar Disc Herniation .	134
	Physical Examination	134
	Imaging and Diagnostic Studies . .	134
	Treatment Considerations.	137
	Nonsurgical	137
	Surgical.	138
	Mind-Body Considerations.	140
	Illustrative Case	141

	Author's Note	142
	Summary Points	142
Chapter 11	Lumbar Degenerative Disc	
	Disease/Lumbar Spondylosis	143
	Clinical Presentation	143
	Cause of Lumbar Degenerative	
	Disc Disease	144
	Physical Examination	145
	Imaging and Diagnostic Studies . .	146
	Treatment Considerations	147
	Nonsurgical	147
	Surgical	148
	Mind-Body Considerations	149
	Illustrative Case	150
	Author's Note	151
	Summary Points	151
Chapter 12	Facet Pain	153
	Clinical Presentation	153
	Cause of Facet Pain	155
	Physical Examination	155
	Imaging and Diagnostic Studies . .	156
	Treatment Considerations	157
	Nonsurgical	157
	Surgical	157
	Mind-Body Considerations	158
	Illustrative Case	158
	Author's Note	159
	Summary Points	159
Chapter 13	Lumbar Stenosis	161
	Clinical Presentation	161
	Cause of Lumbar Stenosis	162
	Physical Examination	163
	Imaging and Diagnostic Studies . .	164
	Treatment Considerations	164
	Nonsurgical	164

	Surgical	165
	Mind-Body Considerations	167
	Illustrative Case	168
	Author's Note	170
	Summary Points	170
Chapter 14	Sacroiliac Pain	171
	Clinical Presentation	171
	Cause of Sacroiliac Pain	172
	Physical Examination	173
	Imaging and Diagnostic Studies . .	174
	Treatment Considerations	175
	Nonsurgical	175
	Surgical	176
	Mind-Body Considerations	176
	Illustrative Case	177
	Author's Note	178
	Summary Points	179
Chapter 15	Myofascial Pain	180
	Clinical Presentation	180
	Cause of Myofascial Pain	182
	Physical Examination	183
	Imaging and Diagnostic Studies . .	183
	Treatment Considerations	183
	Nonsurgical	183
	Surgical	185
	Mind-Body Considerations	185
	Illustrative Case	186
	Author's Note	188
	Summary Points	189
Chapter 16	Failed-Back Syndrome	
	(Post-Laminectomy Syndrome) . . .	190
	Clinical Presentation	190
	Cause of Failed-Back Syndrome . .	191
	Physical Examination	192
	Imaging and Diagnostic Studies . .	192

	Treatment Considerations	193
	Nonsurgical	193
	Surgical	194
	Mind-Body Considerations	195
	Illustrative Case	195
	Author's Note	197
	Summary Points	197
Chapter 17	Chronic Pain Syndrome	199
	Clinical Presentation	199
	Cause of Chronic Pain Syndrome .	200
	Physical Examination	201
	Imaging and Diagnostic Studies . .	201
	Treatment Considerations	202
	Nonsurgical	202
	Surgical	203
	Mind-Body Considerations	204
	Illustrative Case	205
	Author's Note	207
	Summary Points	208
Chapter 18	Closing Thoughts	209
	Glossary of Terms	211
	Index	227