

# Contents

## Part I Background

|   |    |
|---|----|
| <b>Introduction</b>                             | 3  |
| Summary   | 7  |
| References                                      | 7  |
| <b>Fibromyalgia Definition and Epidemiology</b> | 9  |
| Defining Fibromyalgia                           | 10 |
| Epidemiology of Fibromyalgia                    | 12 |
| Co-morbid Conditions                            | 13 |
| Fibromyalgia Burden                             | 17 |
| Summary   | 19 |
| References                                      | 20 |
| <b>Pathophysiology of Fibromyalgia</b>          | 23 |
| Nerve Abnormalities                             | 24 |
| Structural Changes                              | 24 |
| Functional Changes                              | 26 |
| Neurotransmitters                               | 28 |
| Musculoskeletal Abnormalities                   | 28 |
| Muscle Dysfunction                              | 28 |
| Cervical Spine Abnormalities                    | 30 |
| Hormonal Factors                                | 30 |
| Growth Hormone                                  | 30 |
| Thyroid Function                                | 31 |
| Neuroendocrine Abnormalities                    | 32 |
| Inflammatory Markers                            | 32 |
| Genetics  | 33 |
| Free Radicals and Antioxidants                  | 34 |
| Trauma  | 35 |
| Predictive Factors                              | 35 |
| Summary   | 36 |
| References                                      | 37 |

|   |     |
|---|-----|
| <b>Assessment and Diagnosis</b> . . . . .                                     | 41  |
| Assessment of Fibromyalgia . . . . .  | 42  |
| Pain Assessment . . . . .   | 43  |
| Assessment of Treatable Co-morbid Symptoms . . . . .                          | 45  |
| Diagnosis of Fibromyalgia . . . . .   | 48  |
| Summary . . . . .   | 50  |
| References . . . . .  | 50  |
| <br><b>Part II Common Co-morbidities and Fibromyalgia</b>                     |     |
| <b>Headache</b> . . . . .   | 55  |
| Pathophysiology of Headache and Fibromyalgia . . . . .                        | 56  |
| Evaluation and Diagnosis . . . . .  | 58  |
| Migraine . . . . .  | 61  |
| Treatment . . . . .   | 63  |
| Acute Treatment for Migraine and Tension-Type Headache . . . . .              | 65  |
| Prevention Treatment for Frequent Migraine or Tension-Type Headache . . . . . | 67  |
| Injections and Alternative Treatments . . . . .                               | 68  |
| Cluster Headache Treatment . . . . .  | 70  |
| Summary . . . . .   | 70  |
| References . . . . .  | 71  |
| <br><b>Chronic Fatigue Syndrome</b> . . . . .                                 | 75  |
| Defining Chronic Fatigue Syndrome . . . . .                                   | 76  |
| Epidemiology of Chronic Fatigue Syndrome . . . . .                            | 78  |
| Co-morbidity . . . . .  | 78  |
| Pathophysiology of Chronic Fatigue Syndrome . . . . .                         | 79  |
| Role of Immune Deficiency in Chronic Fatigue Syndrome . . . . .               | 81  |
| Assessment of Chronic Fatigue Syndrome . . . . .                              | 82  |
| Treatment of Chronic Fatigue Syndrome . . . . .                               | 83  |
| Summary . . . . .   | 86  |
| References . . . . .  | 87  |
| <br><b>Irritable Bowel Syndrome</b> . . . . .                                 | 89  |
| Irritable Bowel Syndrome (IBS) . . . . .                                      | 92  |
| Definition and Epidemiology . . . . .   | 92  |
| Evaluation and Diagnosis . . . . .  | 93  |
| Treatment . . . . .   | 95  |
| Summary . . . . .   | 98  |
| References . . . . .  | 98  |
| <br><b>Sleep Disturbance</b> . . . . .  | 101 |
| Consequences of Sleep Disturbance . . . . .                                   | 103 |
| Cardiovascular Disease . . . . .  | 104 |
| Obesity . . . . .   | 104 |
| Diabetes . . . . .  | 105 |
| Pain Sensitivity . . . . .  | 105 |

|  |            |
|--|------------|
| Sleep Disturbance in Fibromyalgia . . . . .                    | 106        |
| Measuring Sleep Dysfunction in Fibromyalgia Patients . . . . . | 107        |
| Treating Sleep Disturbance in Fibromyalgia . . . . .           | 108        |
| Medication . . . . .   | 109        |
| Behavioral Interventions . . . . .                             | 110        |
| Sleep Hygiene Measures . . . . .                               | 110        |
| Cognitive-Behavioral Therapy . . . . .                         | 111        |
| Natural Remedies . . . . .                                     | 111        |
| Summary . . . . .  | 112        |
| References . . . . .   | 112        |
| <b>Depression and Anxiety . . . . .</b>                        | <b>115</b> |
| Epidemiology . . . . .   | 116        |
| Evaluation and Diagnosis of Co-morbid Mood Disorders . . . . . | 118        |
| Self-Efficacy and Locus of Control . . . . .                   | 119        |
| Treatment . . . . .  | 121        |
| Summary . . . . .  | 122        |
| References . . . . .   | 122        |
| <b>Obesity and Metabolic Syndrome . . . . .</b>                | <b>123</b> |
| Obesity . . . . .  | 123        |
| Obesity in Fibromyalgia . . . . .                              | 125        |
| Consequences of Obesity . . . . .                              | 125        |
| Treatment of Obesity . . . . .                                 | 126        |
| Metabolic Syndrome . . . . .                                   | 128        |
| Metabolic Syndrome in Fibromyalgia . . . . .                   | 130        |
| Treatment of Metabolic Syndrome . . . . .                      | 130        |
| Summary . . . . .  | 131        |
| References . . . . .   | 131        |
| <b>Part III Treatment</b>                                      |            |
| <b>Published Recommendations . . . . .</b>                     | <b>135</b> |
| Ottawa Panel Evidence-Based Exercise Guidelines . . . . .      | 136        |
| European League Against Rheumatism (EULAR) . . . . .           | 137        |
| German Interdisciplinary Association of Pain Therapy . . . . . | 139        |
| Limitations of Current Guidelines . . . . .                    | 139        |
| Summary . . . . .  | 140        |
| References . . . . .   | 140        |
| <b>Medication Treatments . . . . .</b>                         | <b>143</b> |
| Effective Medications . . . . .                                | 145        |
| Antidepressants . . . . .                                      | 145        |
| Antiepileptics . . . . .                                       | 149        |
| Sleep Therapy . . . . .  | 150        |
| Moderate Efficacy Medications . . . . .                        | 151        |

|  |            |
|--|------------|
| Minimal Efficacy Medications . . . . .   | 152        |
| General Fibromyalgia Medication Recommendations . . . . .                                | 152        |
| Emerging Therapies . . . . .   | 153        |
| Summary . . . . .  | 155        |
| References . . . . .   | 155        |
| <b>Non-medication Treatments . . . . .</b>   | <b>159</b> |
| Physical Treatments . . . . .  | 161        |
| Exercise . . . . .   | 161        |
| Hydrotherapy . . . . .   | 162        |
| Manual Therapy . . . . .   | 164        |
| Yoga . . . . .   | 164        |
| Work Simplification and Pacing . . . . .   | 164        |
| Acupuncture . . . . .  | 165        |
| Psychological Treatments . . . . .   | 165        |
| Cognitive-Behavioral Therapy and Operant-Behavioral Therapy . . . . .                    | 166        |
| Lifestyle Modifications . . . . .  | 167        |
| Smoking Cessation . . . . .  | 167        |
| Sleep Hygiene . . . . .  | 170        |
| Weight Management . . . . .  | 171        |
| Developing a Treatment Program . . . . .   | 171        |
| Summary . . . . .  | 172        |
| References . . . . .   | 173        |
| <b>Nutritional Supplements . . . . .</b>   | <b>175</b> |
| Intravenous Nutrient Therapy . . . . .   | 177        |
| Chlorella Pyrenoidosa . . . . .  | 177        |
| Methionine . . . . .   | 179        |
| Melatonin . . . . .  | 180        |
| Vitamins . . . . .   | 181        |
| Vitamin C . . . . .  | 181        |
| Vitamin D . . . . .  | 181        |
| Minerals . . . . .   | 182        |
| Coenzyme Q10 . . . . .   | 182        |
| Carnitine . . . . .  | 184        |
| Omega-3 Fatty Acids . . . . .  | 184        |
| Summary . . . . .  | 184        |
| References . . . . .   | 185        |
| <b>Clinical Handouts . . . . .</b>   | <b>187</b> |
| Charting Assessment and Treatment Documentation Forms . . . . .                          | 187        |
| Charting Documentation Form 1: Fibromyalgia Tender Point Examination . . . . .           | 188        |
| Charting Documentation Form 2: Fibromyalgia Patient Assessment Recording Sheet . . . . . | 189        |

|   |     |
|---|-----|
| Charting Documentation Form 3: Revised Fibromyalgia Impact Questionnaire [FIQR] . . . . . | 190 |
| Charting Documentation Form 4: Screening for Psychological Distress . . . . .             | 191 |
| Charting Documentation Form 5: Screen for Locus of Control . . . . .                      | 192 |
| Patient Educational Handouts . . . . .  | 194 |
| Patient Handout 1: Understanding Fibromyalgia . . . . .                                   | 195 |
| Patient Handout 2: Whole Body Stretches for Fibromyalgia . . . . .                        | 197 |
| Patient Handout 3: Exercise for Fibromyalgia . . . . .                                    | 203 |
| Patient Handout 4: Pain Management Techniques . . . . .                                   | 205 |
| Patient Handout 5: Relaxation Techniques . . . . .  | 207 |
| Patient Handout 6: Sleep Management for Fibromyalgia Patients . . . . .                   | 208 |
| Patient Handout 7: Nutritional Supplements for Fibromyalgia . . . . .                     | 210 |
| References . . . . .  | 211 |

## **Part IV Special Populations**

|  |     |
|--|-----|
| <b>Fibromyalgia and Pregnancy</b> . . . . .                    | 215 |
| Epidemiology of Fibromyalgia During Pregnancy . . . . .        | 216 |
| Fibromyalgia and Pregnancy . . . . .                           | 216 |
| Fibromyalgia Post-partum . . . . .                             | 218 |
| Fibromyalgia and Breastfeeding . . . . .                       | 218 |
| Treating Fibromyalgia Throughout Pregnancy . . . . .           | 218 |
| Pre-conception Planning . . . . .                              | 219 |
| Pregnancy . . . . .  | 221 |
| Modifying Non-medication Treatments During Pregnancy . . . . . | 221 |
| Safety Rating Systems . . . . .                                | 223 |
| Analgesics . . . . .   | 225 |
| Antidepressants . . . . .                                      | 226 |
| Antiepileptics . . . . .                                       | 227 |
| Sodium Oxybate . . . . .                                       | 227 |
| Anti-emetics . . . . .   | 228 |
| Labor and Delivery . . . . .                                   | 228 |
| Safety Determinations with Breastfeeding . . . . .             | 229 |
| Analgesics . . . . .   | 229 |
| Antidepressants . . . . .                                      | 230 |
| Sodium Oxybate . . . . .                                       | 230 |
| Antiepileptics . . . . .                                       | 230 |
| Planning for Nursing Success . . . . .                         | 231 |
| Summary . . . . .  | 232 |
| References . . . . .   | 232 |
| <b>Fibromyalgia in Seniors</b> . . . . .                       | 237 |
| Fibromyalgia Assessment . . . . .                              | 239 |
| Fibromyalgia Treatment in Seniors . . . . .                    | 241 |
| Non-medication Therapy . . . . .                               | 242 |
| Medications . . . . .  | 244 |

|  |            |
|--|------------|
| Summary . . . . .  | 246        |
| References . . . . .   | 247        |
| <b>Gender and Ethnic Issues . . . . .</b>                              | <b>249</b> |
| Gender Differences in Fibromyalgia Symptoms and Treatment Response . . | 250        |
| Fibromyalgia Symptoms . . . . .  | 251        |
| Consultation . . . . .   | 252        |
| Treatment Response . . . . .   | 253        |
| Ethnic Differences in Fibromyalgia Symptoms and Treatment Response . . | 254        |
| Fibromyalgia Prevalence . . . . .                                      | 255        |
| Treatment Response . . . . .   | 256        |
| Summary . . . . .  | 257        |
| References . . . . .   | 257        |
| <b>Index . . . . .</b>   | <b>259</b> |

Fibromyalgia

A Practical Clinical Guide

Marcus, D.A.; Deodhar, A.

2011, XII, 200 p. 65 illus., Softcover

ISBN: 978-1-4419-1608-2