Contents

1. Introduction **1**
Sharad Pendsey
- Goals 1
- Methods 1
- Project at a Glance 2
- Impact 2
- Results 2

2. Historical Notes on a Modern Disease: The Diabetic Foot **4**
Lee J Sanders
- Diabetes in the Age of Antiquity 4
- Diabetes in the Middle Ages 4
- The Renaissance 5
- The Seventeenth Century 5
- The Eighteenth Century 6
- The Nineteenth Century 6
- The Twentieth Century 7
- The Team Approach to Diabetes Care 8
- Preventive Diabetic Foot Care 8
- The Role of Neuropathy in Diabetes 9
- Prevention of Foot Ulcers and Amputations 9
- Understanding Causal Pathways to Amputation and Ulceration 10
- European Initiatives in the 1990s 10
- The Twenty-First Century 11
- Clinical Practice Guidelines and International Consensus 12

3. Surgical Anatomy of the Lower Limb and Foot **13**
Shigeo Kono
- Essential Anatomic Information for Foot Care 13
- Normal Weight Bearing 21

4. The Global Burden of Diabetic Foot **24**
Zulfiqarali G Abbas
- Introduction and Epidemiology 24
- Characterization of the Burden of the Diabetic Foot 26
- The Burden of the Septic Diabetic Foot 28
- Prevention 28

5. Diabetic Neuropathy **31**
Andrew JM Boulton
- Historical Aspects of Diabetic Neuropathy 31
- Classification, Epidemiology and Clinical Features of the Diabetic Neuropathies 32
- Clinical Features of Diabetic Peripheral Neuropathy 33
- Prevention and Treatment of Diabetic Peripheral Neuropathy 35
- Clinical Management of Diabetic Peripheral Neuropathy 35
- Pathogenetic Treatments 35

- Diabetic Neuropathy and Foot Ulceration 37
- The Patient with Sensory Loss 37

6. The Biomechanics of the Diabetic Foot **39**
Virginia Bower
- Basic Principles of Foot Biomechanics 40
- Features of the Biomechanical Assessment 40
- Rearfoot Biomechanics 42
- Forefoot Biomechanics 44
- Joint Deformity 46

7. Examination of Feet **49**
Sharad Pendsey
- Quick Examination of the Feet 49
- Comprehensive Examination of Feet 49
- Assessment of Significant Neuropathy 51
- Vibration Perception Threshold Testing 52
- Testing for Vascular Assessment 52

8. Classification and Staging of Diabetic Foot **55**
Michael Edmonds
- Classification of the Diabetic Foot 55
- Assessment of the Diabetic Foot 56
- Simple Staging of the Diabetic Foot 56
- Other Foot Classification Systems 59

9. The Assessment and Management of Plantar Ulcers and Offloading the Diabetic Foot **63**
Neil Baker
- Definition of a Plantar Ulcer 63
- Plantar Ulcer Management Blueprint 63
- Ulcer Assessment 64
- Management 68
- Offloading 73
- Surgical Options 76

10. The Diabetic Charcot Foot: Diagnosis and Management **78**
Robert G Frykberg
- Epidemiology 78
- The Etiology of Charcot Neuroarthropathy 78
- Clinical Diagnosis of Acute Charcot Arthropathy 80
- Classification of Charcot Arthropathy 82
- Management of Acute Charcot Arthropathy 82
- Surgical Management of the Diabetic Charcot Foot 83

11. Diabetic Foot Infections **87**
Sharad Pendsey
- Pathophysiology 87
- Diagnosis 87
- Clinical Syndromes 90
- Severe Diabetic Foot Infections 96
- Management 98

12. Principles of Debridement in the Infected Foot **102**
Jennifer Pappalardo, David G Armstrong

13. Evaluation of Neuroischemic Foot **111**
Sharad Pendsey

14. Approach to Dysvascular Diabetic Foot **118**
KR Suresh, Aniket Pradhan
- Defining Dysvascular Foot 118
- Epidemiology and Natural History of PAD 119

15. Diabetic Foot Ulcers: Short- and Long-term Outcomes **134**
Fran Game, Stephan Morbach
- Short-Term Outcome Measures 134
- Long-Term Outcomes 136

16. Amputations **139**
Arun Bal
- Introduction and Epidemiology 139
- Decision Making 140
- Preoperative Considerations 140
- Regional Anesthesia for Lower Limb Surgery 141
- Lower Limb Amputations 141
- Minor Amputations 142
- Major Amputations 149
- Consequences of Limb Amputation 151
- Wound Care 151

17. Advanced Wound Healing Products and Techniques **153**
Michael Edmonds
- Platelet-derived Growth Factor 153
- Recombinant Human Epidermal Growth 153
- Regenerative Tissue—Engineered Materials that Expedite Wound Healing 154
- Skin Substitutes 154
- Extracellular Matrix Protein 154
- Protease Inhibitors 155
- Vasoactive Compound 155
- Platelet Therapies 155
- Advanced Wound Healing Techniques 155

18. Atypical Aspects of the Diabetic Foot **159**
Sharad Pendsey, Sanket Pendsey
- Sharp Injuries 159
- Inappropriate Footwear 160
- Rat Bite 160
- Thermal Injuries 161
- Lateral Malleolar Bursitis 162
- Life-threatening Infection 163
- Maggots 164
- Belief in Alternative Medicine and Faith Healers 164
- Young Amputees 165

- Peripheral Vascular Disease 166
- Charcot Foot 166
- Diabetic Hand 167

19. Screening and Prevention of the Diabetic Foot **170**
Hermelinda C Pedrosa
- Screening 171
- Prevention 172

20. Prescribing Footwear **176**
Vijay Viswanathan
- Use of Improper Footwear and Its Consequences 176
- Determining the Correct Footwear 176
- Types of Shoes 177
- General Principles of Prescription of Footwear 177

21. Patient Education and Empowerment in the Prevention and Management of Diabetic Foot Disease **185**
William Jeffcoate
- Teaching and Learning 185
- Behavior Change and Empowerment 188
- Assessing the Effectiveness of Education 188
- Core Education of Health Care Professionals 189
- Core Education of People with Diabetes 190

22. Establishing a Multidisciplinary/Interdisciplinary Diabetic Foot Clinic **191**
Kristien Van Acker
- How to Establish a Diabetic Foot Clinic? The Step Model: From Minimal to Maximal 192
- Referral and Contra-referral with the Primary Care 197

Index *199*