Contents doments

| Acknowledgments | | vii | | Accelerometers | 159 |
|---------------------------|--|-----|----|--|-----|
| Preface to fourth edition | | ix | | Gyroscopes | 160 |
| Preface to first edition | | xi | | Force platforms | 160 |
| | | | | Kinematic systems | 165 |
| 1 | Basic sciences | 1 | | Combined kinetic/kinematic systems | 172 |
| | Anatomy | 1 | | References and suggestions for further reading | 174 |
| | Physiology | 19 | | | |
| | Biomechanics | 31 | 5 | Applications of gait analysis | 177 |
| | References and suggestions for further reading | 45 | | Clinical gait assessment | 178 |
| | | | | Conditions benefiting from gait assessment | 187 |
| 2 | Normal gait | 47 | | Future developments | 191 |
| | Walking and gait | 47 | | Conclusion | 192 |
| | History | 48 | | References and suggestions for further reading | 192 |
| | Terminology used in gait analysis | 52 | | Vicon Peak Ltd. Three | |
| | Outline of the gait cycle | 57 | 6 | Gait assessment in cerebral palsy | 195 |
| | The gait cycle in detail | 64 | | Basic physiology of movement | 195 |
| | Ground reaction forces | 80 | | The causes of cerebral palsy | 196 |
| | Support moment | 84 | | Spastic hemiplegia | 197 |
| | Energy consumption | 84 | | Spastic diplegia | 199 |
| | Optimization of energy usage | 87 | | Other varieties of cerebral palsy | 200 |
| | Starting and stopping | 92 | | Crouch gait | 201 |
| | Other varieties of gait | 93 | | Spasticity | 202 |
| | Gait in the young | 94 | | Lever arm dysfunction | 203 |
| | Gait in the elderly | 96 | | Gait patterns in cerebral palsy | 204 |
| | References and suggestions for further reading | -98 | | Gait assessment | 209 |
| | | | | Overview of treatment | 214 |
| | Pathological and other abnormal gaits | 101 | | Summary | 216 |
| | Specific gait abnormalities | 102 | | References and suggestions for further reading | 217 |
| | Walking aids | 122 | | | |
| | Amputee gait | 129 | 7 | Gait analysis data on CD-ROM | 219 |
| | Treadmill gait | 133 | | Computer requirements | 219 |
| | Common pathologies affecting gait | 134 | | Running the CD | 219 |
| | References and suggestions for further reading | 135 | | Contents of the CD | 220 |
| | | | | How to use the Polygon viewer | 220 |
| 4 | Methods of gait analysis | 137 | | Notes | 222 |
| | Visual gait analysis | 137 | | Acknowledgments | 222 |
| | General gait parameters | 143 | Ar | ppendices | 223 |
| | Timing the gait cycle | 146 | | 1. Normal ranges for gait parameters | 223 |
| | Direct motion measurement systems | 148 | | 2. Conversions between measurement units | 225 |
| | Electrogoniometers | 149 | | 3. Sources of further information | 229 |
| | Pressure beneath the foot | 152 | | | |
| | Electromyography | 154 | Gl | ossary | 233 |
| | Energy consumption | 157 | In | dex | 243 |
| | | | | | |