

- **Acknowledgments** (p. vii)
- **Preface to fourth edition** (p. ix)
- **Preface to first edition** (p. xi)
- **1 Basic sciences** (p. 1)
- **Anatomy** (p. 1)
- **Physiology** (p. 19)
- **Biomechanics** (p. 31)
- **References and suggestions for further reading** (p. 45)
- **2 Normal gait** (p. 47)
- **Walking and gait** (p. 47)
- **History** (p. 48)
- **Terminology used in gait analysis** (p. 52)
- **Outline of the gait cycle** **57** (p. 195)
- **The gait cycle in detail** (p. 64)
- **Ground reaction forces** (p. 80)
- **Support moment** (p. 84)
- **Energy consumption** (p. 84)
- **Optimization of energy usage** (p. 87)
- **Starting and stopping** (p. 92)
- **Other varieties of gait** (p. 93)
- **Gait in the young** (p. 94)
- **Gait in the elderly** (p. 96)
- **References and suggestions for further reading** (p. 98)
- **3 Pathological and other abnormal gaits** (p. 101)
- **Specific gait abnormalities** (p. 102)
- **Walking aids** (p. 122)
- **Amputee gait** (p. 129)
- **Treadmill gait** (p. 133)
- **Common pathologies affecting gait** (p. 134)
- **References and suggestions for further reading** (p. 135)
- **4 Methods of gait analysis** (p. 137)
- **Visual gait analysis** (p. 137)
- **General gait parameters** (p. 143)
- **Timing the gait cycle** (p. 146)
- **Direct motion measurement systems** (p. 148)
- **Electrogoniometers** (p. 149)
- **Pressure beneath the foot** (p. 152)
- **Electromyography** (p. 154)
- **Energy consumption** (p. 157)
- **Accelerometers** (p. 159)
- **Gyroscopes** (p. 160)
- **Force platforms** (p. 160)
- **Kinematic systems** (p. 165)
- **Combined kinetic/kinematic systems** (p. 172)
- **References and suggestions for further reading** (p. 174)
- **5 Applications of gait analysis** (p. 177)

- **Clinical gait assessment** (p. 178)
- **Conditions benefiting from gait assessment** (p. 187)
- **Future developments** (p. 191)
- **Conclusion** (p. 192)
- **References and suggestions for further reading** (p. 192)
- **6 Gait assessment in cerebral palsy** (p. 195)
- **Basic physiology of movement** (p. 195)
- **The causes of cerebral palsy** (p. 196)
- **Spastic hemiplegia** (p. 197)
- **Spastic diplegia** (p. 199)
- **Other varieties of cerebral palsy** (p. 200)
- **Crouch gait** (p. 201)
- **Spasticity** (p. 202)
- **Lever arm dysfunction** (p. 203)
- **Gait patterns in cerebral palsy** (p. 204)
- **Gait assessment** (p. 209)
- **Overview of treatment** (p. 214)
- **Summary** (p. 216)
- **References and suggestions for further reading** (p. 217)
- **7 Gait analysis data on CD-ROM** (p. 219)
- **Computer requirements** (p. 219)
- **Running the CD** (p. 219)
- **Contents of the CD** (p. 220)
- **How to use the Polygon viewer** (p. 220)
- **Notes** (p. 222)
- **Acknowledgments** (p. 222)
- **Appendices** (p. 223)
- **1 Normal ranges for gait parameters** (p. 223)
- **2 Conversions between measurement units** (p. 225)
- **3 Sources of further information** (p. 229)
- **Glossary** (p. 233)
- **Index** (p. 243)