## Contents

*List of Contributors*, vii

*Foreword*, ix

*Preface*, x

1. From Isolated Actions to True Muscle Function, 1  
PAAVO V. KOMI

2. Stretch-Shortening Cycle of Muscle Function, 15  
PAAVO V. KOMI AND CAROLINE NICOL

3. Utilization of Stretch-Shortening Cycles in Cross-Country Skiing, 32  
ROBERT NORMAN, VESA LINNAMO, AND PAAVO V. KOMI

4. Neuromechanics of the Cycling Task, 52  
ROBERT J. GREGOR AND W. LEE CHILDERS

5. Kinetics and Muscular Function in Alpine Skiing, 78  
ERICH MÜLLER, JOSEF KROELL, CHRISTIAN SCHIEFERMÜLLER, AND JAMES M. WAKELING

6. Kinetics and Muscular Function in Ski Jumping, 91  
MIKKO VIRMAVIRTA AND PAAVO V. KOMI

7. Mechanical Efficiency of SSC Exercise, 103  
HEIKKI KYRÖLÄINEN AND PAAVO V. KOMI

8. Transcranial Magnetic Stimulation as a Tool to Study the Role of the Motor Cortex in Human Muscle Function, 115  
JANNE AVELA AND MARKUS GRUBER

9. Contribution of In-Vivo Human Tendon Force Measurements for Understanding Tendomuscular Loading During SSC, 135  
PAAVO V. KOMI

10. Ultrasound as a Tool to Record Muscle Function During Normal Locomotion, 150  
MASAKI ISHIKAWA AND PAAVO V. KOMI

11. Neuromechanical Loading of Biological Tissues, 164  
GERT-PETER BRÜGGMANN

12. Stretch-Shortening Cycle Fatigue, 183  
CAROLINE NICOL AND PAAVO V. KOMI

13. Training Adaptation of the Neuromuscular System, 216  
JACQUES DUCHATEAU AND STÉPHANE BAUDRY