

In recent years there has been great interest among clinicians regarding the tremendous expansion of research in the field of motor control and the implications of this research to clinical practice. This explosion of new research in the field of neuroscience and motor control has created a gap between research and clinical practice. *Motor Control: Translating Research into Clinical Practice*, Fourth Edition is dedicated to reducing this gap by reviewing current research in the area of motor control and exploring the translation of this research into best clinical practices.

AN OVERVIEW OF THE FOURTH EDITION

This book is divided into four parts. Part I, Theoretical Framework, reviews current theories of motor control, motor learning, and recovery of function after neurological insult. The clinical implications of various theories of motor control are discussed, as are the physiological basis of motor control and motor learning. This part also includes a suggested conceptual framework for clinical practice and a framework for understanding and examining impairments in the patient with neurological deficits. The first part is the foundation for the major thrust of the book, which addresses motor control issues as they relate to the control of posture and balance (Part II), mobility (Part III), and upper-extremity function (Part IV).

The chapters in each of these parts follow a standard format. The first chapter in each part discusses issues related to normal control processes. The second chapter (and in some cases the third) describes age-related issues. The third chapter presents research on abnormal function, and the final chapters discuss the clinical applications of current research, including methods for examining and treating patients with motor dyscontrol in each of the three functional areas.

This book will be of use in several ways. First, we envision it as a textbook used in both undergraduate and graduate courses on normal motor control, motor development across the lifespan, and rehabilitation in the area of physical and occupational therapy, as well as kinesiology and exercise science. We also envision that the book will assist clinicians in staying connected to some of the research that serves as the foundation for evidence-based clinical practice. A strength of *Motor Control: Translating Research into Clinical Practice*, Fourth Edition is its summary of a broad range of research papers and the translation of this research into clinical practice. However, reading summaries cannot replace the insights that are gained by delving into the original research papers. A book by its very nature summarizes only research available before its publication; therefore it is critical that clinicians and students alike continue to read emerging research.

CHANGES TO THE FOURTH EDITION

This fourth edition of *Motor Control* includes updated research in each of the three key areas: postural control, mobility, and upper extremity function. Laboratory activities have been expanded and, as in the third edition, answer keys are at the end of each chapter. Five case studies with associated videos have been added to assist the reader in understanding underlying impairments associated with specific neurological

diagnoses, and the use of selected clinical measures to assess aspects of postural control, mobility, and upper extremity function. Each of the clinical chapters includes an extensive review of the research on the efficacy of assessment and treatment procedures presented.

Additional Resources

Motor Control, Fourth Edition includes additional resources for both students and instructors that are available on the book's companion website at <http://thepoint.lww.com/Shumway-Cook4e>. The student resources are also available via the Student Resource DVD-ROM packaged with this text.

Students

Students who have purchased *Motor Control*, Fourth Edition have access to the following additional resources on a back-of-book DVD and at <http://thepoint.lww.com/Shumway-Cook4e>:

- Videos that examine motor control deficits, including deficits in postural control, mobility, and upper extremity function in different types of neurologic pathology (chronic stroke, cerebellar pathology, cerebral palsy, and Parkinson's disease) as well as in balance-impaired elders. These videos can be viewed in their entirety or in the following segments: impairments, postural control, mobility, and upper extremity control.
- The searchable Full Text On-line.

Instructors

Approved adopting instructors will be given access to the following additional resources:

- Videos as described above
- A test generator with 380 questions
- An image bank of all the images and tables in the book
- Full Text On-line as described above

A FINAL NOTE

Motor Control: Translating Research into Clinical Practice, Fourth Edition, seeks to provide a framework that will enable the clinician to incorporate current theory and research on motor control into clinical practice. More importantly, it is our hope that the book will serve as a springboard for developing new, more effective approaches to examining and treating patients with motor dyscontrol.

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