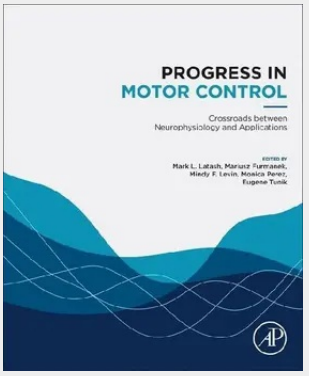
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Progress in Motor Control

Crossroads Between Neurophysiology and Applications



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Progress in Motor Control: Crossroads between Neurophysiology and Applications offers an in-depth look at the evolving field of motor control, synthesizing the latest research. This volume explores the complex roles of the central nervous system in movement, featuring contributions from leading experts who use approaches ranging from basic physical principles to advanced control theory. It addresses applied aspects of motor control, focusing on recovery strategies for functional movements in patients with spinal cord injuries, subcortical disorders, and strokes. Organized into five sections, the book covers theoretical advances, neurophysiological mechanisms, motor learning, neural plasticity, and motor disorders, including topics like neural population dynamics and vestibulospinal reflexes. The final sections highlight strategies for improving recovery after neurological events. This resource bridges foundational research and clinical application, making it invaluable for researchers, clinicians, and students in motor control, neuroscience and rehabilitation. Divided into five comprehensive parts, the book covers theoretical advances, neurophysiological mechanisms, motor learning, neural plasticity, and motor disorders, including essential topics like neural population dynamics and the dual role of vestibulospinal reflexes. Final sections highlight practical strategies for improving recovery outcomes following neurological events.

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