

1. Record Nr.	UNINA9910807840203321
Autore	rothwell john
Titolo	Control of Human Voluntary Movement // by john rothwell
Pubbl/distr/stampa	Dordrecht : , : Springer Netherlands : , : Imprint : Springer, , 1994
ISBN	94-011-6960-8
Edizione	[2nd ed. 1994.]
Descrizione fisica	1 online resource (520p.)
Disciplina	612.8
Soggetti	Neurosciences Neurology Neurology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	1 Introduction: Plans, strategies and actions -- 1.1 Categories of muscles -- 1.2 Problems of moving -- 1.3 A legacy -- 2 Mechanical properties of muscles -- 2.1 Review of muscle anatomy -- 2.2 Mechanical properties of muscle -- 2.3 Behaviour of isolated muscle stimulated at subtetanic rates -- 2.4 Muscle mechanics in intact humans -- 2.5 Effects of muscle properties on control of movement -- 2.6 A theory of movement control which makes use of the mechanical properties of muscle -- 3 The motor unit -- 3.1 The concept of the motor unit -- 3.2 Twitch and tonic muscle fibres -- 3.3 Physiological investigation of the motor unit -- 3.4 Histochemical and biochemical classification of muscle fibres -- 3.5 Some electrophysiological properties of motoneurons -- 3.6 Control of motor units and their recruitment order -- 3.7 The study of motor units in human physiology -- 3.8 Pathophysiology of the motor unit -- 4 Proprioceptors in muscles, joints and skin -- 4.1 Muscle receptors: I. The muscle spindle -- 4.2 Muscle receptors: II. Golgi tendon organs -- 4.3 Muscle receptors: III. Other types of ending -- 4.4 Joint receptors -- 4.5 Cutaneous mechanoreceptors -- 4.6 Recordings from human afferent nerve fibres -- 5 Reflex pathways in the spinal cord -- 5.1 Classification of nerve fibres -- 5.2 Anatomy of group I and II projections of the spinal cord -- 5.3 Reflex pathways from Ia muscle spindle afferents -- 5.4 Reflex pathways from Ib tendon organ

afferents -- 5.5 Reflex pathways from group II muscle afferents and 'flexor reflex afferents' -- 5.6 The Renshaw cell -- 5.7 Presynaptic inhibition -- 6 Investigating reflex pathways and their function -- 6.1 The tendon jerk -- 6.2 The H-reflex -- 6.3 Long latency stretch reflexes -- 6.4 Vibration reflexes -- 6.5 The servo hypothesis and ?-? coactivation -- 6.6 Investigation of activity in other reflex pathways using the H-reflex -- 6.7 Cutaneous reflexes -- 6.8 Pathophysiology of spinal reflexes -- 6.9 Movement without reflexes: deafferentation -- 7 Ascending and descending pathways of the spinal cord -- 7.1 Ascending pathways -- 7.2 Descending motor pathways -- 7.3 Summary of descending pathways -- 7.4 Investigating descending motor pathways in humans -- 8 Posture -- 8.1 The vestibular system -- 8.2 Quiet stance -- 8.3 Postural reflexes -- 8.4 Postural reflexes described in animals -- 8.5 Postural adjustments produced by voluntary movement -- 9 Cerebral cortex -- 9.1 Structure of cerebral cortex -- 9.2 Frontal motor areas of cortex -- 9.3 Electrical stimulation of the motor areas -- 9.4 Electrophysiology of the corticospinal projection -- 9.5 Sensory input to motor cortex -- 9.6 Non-primary motor areas -- 9.7 Lesions of descending pathways in humans and monkeys -- 9.8 Physiology and pathophysiology of human motor areas -- 10 The cerebellum -- 10.1 Cerebellar anatomy -- 10.2 Circuitry of the cerebellar cortex -- 10.3 Efferent pathways of the cerebellum -- 10.4 Electrophysiological studies of the cerebellum -- 10.5 Effects of cerebellar lesions -- 10.6 Adaptation and learning -- 10.7 Theories of cerebellar function -- 10.8 Studies of cerebellar dysfunction in humans -- 11 The basal ganglia -- 11.1 Anatomy -- 11.2 Electrophysiological recordings from behaving animals -- 11.3 Effects of lesions of the basal ganglia -- 11.4 Models of basal ganglia disease in humans -- 11.5 Pathophysiology of diseases of the basal ganglia in humans.

Sommario/riassunto

This comprehensive textbook illustrates the excitement and the difficulties of working at the interface between pure and applied research. Written with the student firmly in mind, the text provides a concise account of the basic anatomy and function of the parts of the CNS involved in controlling body movement. Clinical information is integrated throughout and, wherever possible, details of relevant experiments given.
