

1. Record Nr.	UNINA9910792672503321
Autore	Augustine James R.
Titolo	Human neuroanatomy // James R. Augustine
Pubbl/distr/stampa	Hoboken, New Jersey : , : Wiley Blackwell, , 2017 2017
ISBN	1-119-07399-5
Edizione	[Second edition.]
Descrizione fisica	1 online resource (434 pages) : illustrations
Collana	New York Academy of Sciences
Disciplina	611.8
Soggetti	Neuroanatomy
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Intro -- Title Page -- Copyright Page -- Contents -- Preface -- About the companion website -- Chapter 1 Introduction to the Nervous System -- 1.1 NEURONS -- 1.1.1 Neuronal cell body (soma) -- 1.1.2 Axon hillock -- 1.1.3 Neuronal processes - axons and dendrites -- 1.2 CLASSIFICATION OF NEURONS -- 1.2.1 Neuronal classification by function -- 1.2.2 Neuronal classification by number of processes -- 1.3 THE SYNAPSE -- 1.3.1 Components of a synapse -- 1.3.2 Neurotransmitters and neuromodulators -- 1.3.3 Neuronal plasticity -- 1.3.4 The neuropil -- 1.4 NEUROGLIAL CELLS -- 1.4.1 Neuroglial cells differ from neurons -- 1.4.2 Identification of neuroglia -- 1.4.3 Neuroglial function -- 1.4.4 Neuroglial cells and aging -- 1.4.5 Neuroglial cells and brain tumors -- 1.5 AXONAL TRANSPORT -- 1.5.1 Functions of axonal transport -- 1.5.2 Defective axonal transport -- 1.6 DEGENERATION AND REGENERATION -- 1.6.1 Axon or retrograde reaction -- 1.6.2 Anterograde degeneration -- 1.6.3 Retrograde degeneration -- 1.6.4 Regeneration of peripheral nerves -- 1.6.5 Regeneration and neurotrophic factors -- 1.6.6 Regeneration in the central nervous system -- 1.7 NEURAL TRANSPLANTATION -- FURTHER READING -- Chapter 2 Development of the Nervous System -- 2.1 FIRST WEEK -- 2.1.1 Fertilization -- 2.1.2 From two cells to the free blastocyst -- 2.2 SECOND WEEK -- 2.2.1 Implantation and two distinct layers of cells -- 2.2.2 Primitive streak and a third layer of cells -- 2.3 THIRD WEEK -- 2.3.1 Primitive node

and notochordal process -- 2.3.2 Neural plate, groove, folds, and neuromeres -- 2.3.3 Three main divisions of the brain -- 2.3.4 Mesencephalic flexure appears -- 2.4 FOURTH WEEK -- 2.4.1 Formation of the neural tube -- 2.4.2 Rostral and caudal neuropores open -- 2.4.3 Neural crest cells emerge -- 2.4.4 Neural canal - the future ventricular system. 2.4.5 Neuropores close and neural tube forms -- 2.4.6 Cervical flexure present -- 2.5 FIFTH WEEK -- 2.5.1 Simple tube, complex transformation -- 2.5.2 Five subdivisions of the brain appear -- 2.5.3 Brain vesicles versus brain regions -- 2.6 VULNERABILITY OF THE DEVELOPING NERVOUS SYSTEM -- 2.7 CONGENITAL MALFORMATIONS OF THE NERVOUS SYSTEM -- 2.7.1 Spinal dysraphism -- 2.7.2 Anencephaly -- 2.7.3 Microcephaly -- FURTHER READING -- Chapter 3 The Spinal Cord -- 3.1 EMBRYOLOGICAL CONSIDERATIONS -- 3.1.1 Layers of the developing spinal cord -- 3.1.2 Formation of ventral gray columns and ventral roots -- 3.1.3 Formation of dorsal gray columns -- 3.1.4 Dorsal and ventral horns versus dorsal and ventral gray columns -- 3.1.5 Development of neural crest cells -- 3.1.6 Framework of the adult cord is present at birth -- 3.2 GROSS ANATOMY -- 3.2.1 Spinal cord weight and length -- 3.2.2 Spinal segments, regions, and enlargements -- 3.2.3 Spinal segments in each region are of unequal length -- 3.2.4 Conus medullaris, filum terminale, and cauda equina -- 3.2.5 Termination of the adult spinal cord -- 3.2.6 Differential rate of growth: vertebral column versus the spinal cord -- 3.2.7 Relationship between spinal segments and vertebrae -- 3.3 NUCLEAR GROUPS - GRAY MATTER -- 3.3.1 General arrangement of spinal cord gray matter -- 3.3.2 Gray matter at enlargement levels -- 3.3.3 Spinal laminae -- 3.3.4 Dorsal horn -- 3.3.5 Intermediate zone -- 3.3.6 Ventral horn -- 3.4 FUNCTIONAL CLASSES OF NEURONS -- 3.4.1 Four classes of neurons in the spinal cord -- 3.4.2 Somatic afferent versus visceral afferent neurons -- 3.4.3 Somatic efferent versus visceral efferent neurons -- 3.4.4 Some ventral root axons are sensory -- 3.5 FUNICULI/FASCICULI/TRACTS - WHITE MATTER -- 3.6 SPINAL REFLEXES -- 3.7 SPINAL MENINGES AND RELATED SPACES -- 3.7.1 Spinal dura mater. 3.7.2 Spinal arachnoid -- 3.7.3 Spinal pia mater -- 3.8 SPINAL CORD INJURY -- 3.8.1 Hemisection of the spinal cord -- 3.8.2 Syringomyelia -- 3.9 BLOOD SUPPLY TO THE SPINAL CORD -- FURTHER READING -- Chapter 4 The Brain Stem -- 4.1 EXTERNAL FEATURES -- 4.1.1 Medulla oblongata -- 4.1.2 Pons -- 4.1.3 Midbrain -- 4.2 CEREBELLUM AND FOURTH VENTRICLE -- 4.2.1 Cerebellum -- 4.2.2 Fourth ventricle -- 4.3 ORGANIZATION OF BRAIN STEM NEURONAL COLUMNS -- 4.3.1 Functional components of the cranial nerves -- 4.3.2 Efferent columns -- 4.3.3 Afferent columns -- 4.4 INTERNAL FEATURES -- 4.4.1 Endogenous substances -- 4.4.2 Medulla oblongata -- 4.4.3 Pons -- 4.4.4 Midbrain -- FURTHER READING -- Chapter 5 The Forebrain -- 5.1 TELEENCEPHALON -- 5.1.1 Telencephalon medium -- 5.1.2 Cerebral hemispheres -- 5.1.3 Basal ganglia (basal nuclei) -- 5.1.4 Rhinencephalon -- 5.2 DIENCEPHALON -- 5.2.1 Epithalamus -- 5.2.2 Thalamus -- 5.2.3 Subthalamus -- 5.2.4 Hypothalamus -- 5.3 CEREBRAL WHITE MATTER -- FURTHER READING -- Chapter 6 Introduction to Ascending Sensory Paths -- 6.1 RECEPTORS -- 6.2 CLASSIFICATION OF RECEPTORS BY MODALITY -- 6.2.1 Mechanoreceptors -- 6.2.2 Thermoreceptors -- 6.2.3 Nociceptors -- 6.2.4 Chemoreceptors -- 6.2.5 Photoreceptors -- 6.2.6 Osmoreceptors -- 6.3 CLASSIFICATION OF RECEPTORS BY DISTRIBUTION AND FUNCTION -- 6.3.1 Exteroceptors -- 6.3.2 Interoceptors -- 6.3.3 Proprioceptors -- 6.4 STRUCTURAL CLASSIFICATION OF RECEPTORS --

6.4.1 Free nerve endings -- 6.4.2 Endings in hair follicles -- 6.4.3 Terminal endings of nerves -- 6.4.4 Neurotendinous spindles -- 6.4.5 Neuromuscular spindles -- 6.5 REFLEX CIRCUITS -- 6.5.1 The monosynaptic reflex -- 6.5.2 Complex reflexes -- 6.6 GENERAL SENSORY PATHS -- 6.6.1 Classification of sensory paths by function -- 6.7 ORGANIZATION OF GENERAL SENSORY PATHS -- 6.7.1 Receptors -- 6.7.2 Primary neurons. 6.7.3 Secondary neurons -- 6.7.4 Thalamic neurons -- 6.7.5 Cortical neurons -- 6.7.6 Modulation of sensory paths -- FURTHER READING -- Chapter 7 Paths for Pain and Temperature -- 7.1 PATH FOR SUPERFICIAL PAIN AND TEMPERATURE FROM THE BODY -- 7.1.1 Modalities -- 7.1.2 Receptors -- 7.1.3 Primary neurons -- 7.1.4 Secondary neurons -- 7.1.5 Position of the LST in the brain stem -- 7.1.6 Thalamic neurons -- 7.1.7 Cortical neurons -- 7.1.8 Modulation of painful and thermal impulses -- 7.2 PATH FOR VISCERAL PAIN FROM THE BODY -- 7.2.1 Modalities and receptors -- 7.2.2 Primary neurons -- 7.2.3 Secondary neurons -- 7.2.4 Thalamic neurons -- 7.2.5 Cortical neurons -- 7.2.6 Suffering accompanying pain -- 7.2.7 Visceral pain as referred pain -- 7.2.8 Transection of fiber bundles to relieve intractable pain -- 7.3 THE TRIGEMINAL NUCLEAR COMPLEX -- 7.3.1 Organization of the trigeminal nuclear complex -- 7.3.2 Organization of entering trigeminal sensory fibers -- 7.4 PATH FOR SUPERFICIAL PAIN AND THERMAL EXTREMES FROM THE HEAD -- 7.4.1 Modalities and receptors -- 7.4.2 Primary neurons -- 7.4.3 Secondary neurons -- 7.4.4 Thalamic neurons -- 7.5 PATH FOR THERMAL DISCRIMINATION FROM THE HEAD -- 7.5.1 Modality and receptors -- 7.5.2 Primary neurons -- 7.5.3 Secondary neurons -- 7.5.4 Thalamic neurons -- 7.5.5 Cortical neurons -- 7.6 SOMATIC AFFERENT COMPONENTS OF VII, IX, AND X -- 7.7 TRIGEMINAL NEURALGIA -- 7.7.1 Causes of trigeminal neuralgia -- 7.7.2 Methods of treatment for trigeminal neuralgia -- 7.8 GLOSSOPHARYNGEAL NEURALGIA -- FURTHER READING -- Chapter 8 Paths for Touch, Pressure, Proprioception, and Vibration -- 8.1 PATH FOR GENERAL TACTILE SENSATION FROM THE BODY -- 8.1.1 Modalities and receptors -- 8.1.2 Primary neurons -- 8.1.3 Secondary neurons -- 8.1.4 Thalamic neurons. 8.2 PATH FOR TACTILE DISCRIMINATION, PRESSURE, PROPRIOCEPTION, AND VIBRATION FROM THE BODY -- 8.2.1 Modalities and receptors -- 8.2.2 Primary neurons -- 8.2.3 Secondary neurons -- 8.2.4 Thalamic neurons -- 8.2.5 Cortical neurons -- 8.2.6 Spinal cord stimulation for the relief of pain -- 8.3 PATH FOR TACTILE DISCRIMINATION FROM THE HEAD -- 8.3.1 Modalities and receptors -- 8.3.2 Primary neurons -- 8.3.3 Secondary neurons -- 8.3.4 Thalamic neurons -- 8.3.5 Cortical neurons -- 8.4 PATH FOR GENERAL TACTILE SENSATION FROM THE HEAD -- 8.4.1 Modalities and receptors -- 8.4.2 Primary neurons -- 8.4.3 Secondary neurons -- 8.4.4 Thalamic neurons -- 8.4.5 Cortical neurons -- 8.5 PATH FOR PROPRIOCEPTION, PRESSURE, AND VIBRATION FROM THE HEAD -- 8.5.1 Modalities and receptors -- 8.5.2 Primary neurons -- 8.5.3 Secondary neurons -- 8.5.4 Thalamic neurons -- 8.5.5 Cortical neurons -- 8.6 TRIGEMINAL MOTOR COMPONENT -- 8.7 CERTAIN TRIGEMINAL REFLEXES -- 8.7.1 "Jaw-closing" reflex -- 8.7.2 Corneal reflex -- FURTHER READING -- Chapter 9 The Reticular Formation -- 9.1 STRUCTURAL ASPECTS -- 9.1.1 Reticular nuclei in the medulla -- 9.1.2 Reticular nuclei in the pons -- 9.1.3 Reticular nuclei in the midbrain -- 9.2 ASCENDING RETICULAR SYSTEM -- 9.3 DESCENDING RETICULAR SYSTEM -- 9.4 FUNCTIONAL ASPECTS OF THE RETICULAR FORMATION -- 9.4.1 Consciousness -- 9.4.2 Homeostatic regulation -- 9.4.3 Visceral reflexes -- 9.4.4 Motor

function -- FURTHER READING -- Chapter 10 The Auditory System --
10.1 GROSS ANATOMY -- 10.1.1 External ear -- 10.1.2 Middle ear --
10.1.3 Internal ear -- 10.2 THE ASCENDING AUDITORY PATH -- 10.2.1
Modality and receptors -- 10.2.2 Primary neurons -- 10.2.3 Secondary
neurons -- 10.2.4 Tertiary neurons -- 10.2.5 Inferior collicular
neurons -- 10.2.6 Thalamic neurons -- 10.2.7 Cortical neurons --
10.2.8 Comments -- 10.3 DESCENDING AUDITORY CONNECTIONS.
10.3.1 Electrical stimulation of cochlear efferents.

Sommario/riassunto

A comprehensive overview of the anatomy of the human brain and
spinal cord. --
