

## Χαρακτηριστικά:

- Provides authoritative, comprehensive guidance on **both pathology-based and anatomy-based diagnoses** to help you diagnose the full range of brain and CNS conditions
- Contains **numerous new diagnoses** and **new chapters** on such topics as inflammatory and demyelinating diseases, metabolic conditions, and CNS tumors
- Reflects **significantly revised brain tumor categories** based on the WHO CNS Classification and the Consortium to Inform Molecular and Practical Approaches to CNS Tumor Taxonomy, including major changes that advance the role of **molecular diagnostics** in CNS tumor classification
- Discusses **key topics** such as advances in treatment of Alzheimer’s disease with the approval of monoclonal antibody (MAB) immunotherapy, CNS manifestations of SARS-CoV-2, and recent advances in vessel wall imaging
- Features nearly **3,200+ high-quality print images and videos** (with an **additional 4,700+ images in the complimentary eBook**), including radiology images, full-color medical illustrations, clinical images, gross pathology photographs, and histology images
- Increases your ability to **communicate imaging findings effectively** with other neuroscientists, including oncologists and neurosurgeons
- Uses **succinct bulleted text and highly templated chapters** for quick comprehension of essential information at the point of care
- **Includes an eBook** that allows you access to everything in the print version as well as **new text, videos, and thousands of additional images and references**, with the ability to search, customize your content, make notes and highlights, and have content read aloud

## Περιεχόμενα:

### PART I: PATHOLOGY-BASED DIAGNOSES

#### SECTION 1: CONGENITAL MALFORMATIONS

##### Approach to Brain Malformations

##### *CHIARI MALFORMATIONS*

Chiari 1

Chiari 2

Chiari 3

##### *HINDBRAIN MALFORMATIONS*

Dandy-Walker Continuum

Rhombencephalosynapsis

Unclassified Cerebellar Dysplasias

Molar Tooth Malformations (Joubert)

Cerebellar Hypoplasia

*DISORDERS OF DIVERTICULATION/CLEAVAGE*

Holoprosencephaly

Syntelencephaly (Middle Interhemispheric Variant)

Septo-Optic Dysplasia

Commissural Abnormalities

*MALFORMATIONS OF CORTICAL DEVELOPMENT*

Congenital Microcephaly

Congenital Muscular Dystrophy

Heterotopic Gray Matter

Polymicrogyria

Focal Cortical Dysplasia

Lissencephaly

Schizencephaly

Hemimegalencephaly

*FAMILIAL TUMOR/NEURO CUTANEOUS SYNDROMES*

Neurofibromatosis Type 1

Neurofibromatosis Type 2

Hippel-Lindau Syndrome

Tuberous Sclerosis Complex

Sturge-Weber Syndrome

Meningioangiomas

Basal Cell Nevus Syndrome

Hereditary Hemorrhagic Telangiectasia

Neurocutaneous Melanosis

Encephalocraniocutaneous Lipomatosis

Aicardi Syndrome

Li-Fraumeni Syndrome

Schwannomatosis

Turcot Syndrome

Ataxia-Telangiectasia

PHACES Syndrome

**SECTION 2: TRAUMA**

Introduction to CNS Imaging, Trauma

*PRIMARY EFFECTS OF CNS TRAUMA*

Scalp and Skull Injuries

Missile and Penetrating Injury

Epidural Hematoma, Classic

Epidural Hematoma, Variant  
Acute Subdural Hematoma  
Subacute Subdural Hematoma  
Chronic Subdural Hematoma  
Traumatic Subarachnoid Hemorrhage  
Cerebral Contusion  
Diffuse Axonal Injury  
Subcortical Injury  
Pneumocephalus  
Abusive Head Trauma

#### *SECONDARY EFFECTS OF CNS TRAUMA*

Intracranial Herniation Syndromes  
Posttraumatic Brain Swelling  
Traumatic Cerebral Ischemia/Infarction  
Brain Death/Death by Neurologic Criteria (BD/DNC)  
Second-Impact Syndrome  
Blunt Cerebrovascular Injury  
Traumatic Carotid Cavernous Fistula  
Chronic Traumatic Encephalopathy  
Leptomeningeal Cyst (Growing Fracture)

### **SECTION 3: SUBARACHNOID HEMORRHAGE AND ANEURYSMS**

Subarachnoid Hemorrhage and Aneurysms Overview

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Aneurysmal Subarachnoid Hemorrhage  
Perimesencephalic Nonaneurysmal Subarachnoid Hemorrhage  
Convexal Subarachnoid Hemorrhage  
Superficial Siderosis, Classic  
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#### *ANEURYSMS*

Saccular Aneurysm  
Pseudoaneurysm  
Vertebrobasilar Dolichoectasia  
ASVD Fusiform Aneurysm  
Non-ASVD Fusiform Aneurysm  
Blood Blister-Like Aneurysm

### **SECTION 4: STROKE**

Stroke Overview

#### *NONTRAUMATIC INTRACRANIAL HEMORRHAGE*

Evolution of Intracranial Hemorrhage  
Spontaneous Nontraumatic Intracranial Hemorrhage  
Hypertensive Intracranial Hemorrhage  
Remote Cerebellar Hemorrhage  
Germinal Matrix Hemorrhage  
Critical Illness-Associated Microbleeds

#### *ATHEROSCLEROSIS AND CAROTID STENOSIS*

Intracranial Atherosclerosis  
Extracranial Atherosclerosis  
Arteriolosclerosis

#### *NONATHEROMATOUS VASCULOPATHY*

Aberrant Internal Carotid Artery  
Persistent Carotid Basilar Anastomoses  
Sickle Cell Disease  
Moyamoya  
Primary Arteritis of CNS  
Miscellaneous Vasculitis  
Reversible Cerebral Vasoconstriction Syndrome  
Vasospasm  
Systemic Lupus Erythematosus  
Cerebral Amyloid Disease  
Cerebral Amyloid Disease, Inflammatory  
Amyloid Related Imaging Abnormalities (ARIA)  
CADASIL  
Behçet Disease  
Susac Syndrome  
Fibromuscular Dysplasia

#### *CEREBRAL ISCHEMIA AND INFARCTION*

Hydranencephaly  
White Matter Injury of Prematurity  
Neonatal Hypoxic-Ischemic Injury  
Adult Hypoxic-Ischemic Injury  
Hypotensive Cerebral Infarction  
Childhood Stroke  
Cerebral Hemiatrophy  
Acute Cerebral Ischemia/Infarction  
Subacute Cerebral Infarction  
Chronic Cerebral Infarction  
Multiple Embolic Cerebral Infarctions  
Fat Emboli Cerebral Infarction  
Cerebral Embolism, Air

Lacunar Infarction  
Cerebral Hyperperfusion Syndrome  
Dural Sinus Thrombosis  
Cortical Venous Thrombosis  
Deep Cerebral Venous Thrombosis  
Dural Sinus and Aberrant Arachnoid Granulations

## **SECTION 5: VASCULAR MALFORMATIONS**

Vascular Malformations Overview

### *CVMS WITH AV SHUNTING*

Arteriovenous Malformation  
Dural AV Fistula  
Pial AV Fistula  
Vein of Galen Aneurysmal Malformation  
Cerebral Proliferative Angiopathy

### *CVMS WITHOUT AV SHUNTING*

Developmental Venous Anomaly  
Sinus Pericranii  
Cavernous Malformation  
Capillary Telangiectasia

## **SECTION 6: NEOPLASMS**

Neoplasms Overview

### *GLIOMAS, GLIONEURONAL TUMORS, AND NEURONAL TUMORS*

#### **Adult-Type Diffuse Gliomas**

Astrocytoma, IDH-Mutant  
Oligodendroglioma, IDH-Mutant and 1p/19q-Codeleted  
Glioblastoma, IDH-Wildtype

#### **Pediatric-Type Diffuse Low-Grade Gliomas**

Diffuse Astrocytoma, MYB- or MYBL1-Altered  
Angiocentric Glioma  
Polymorphous Low-Grade Neuroepithelial Tumor of Young  
Diffuse Low-Grade Glioma, MAPK Pathway-Altered

#### **Pediatric-Type Diffuse High-Grade Gliomas**

Diffuse Midline Glioma, H3 K27-Altered  
Diffuse Hemispheric Glioma, H3 G34-Mutant  
Diffuse Pediatric-Type High-Grade Glioma, H3-Wildtype and IDH-Wildtype  
Infant-Type Hemispheric Glioma

### **Circumscribed Astrocytic Gliomas**

Pilocytic Astrocytoma  
High-Grade Astrocytoma With Pilooid Features  
Pleomorphic Xanthoastrocytoma  
Subependymal Giant Cell Astrocytoma  
Astroblastoma, MN1-Altered

### **Glioneuronal and Neuronal Tumors**

Ganglioglioma  
Gangliocytoma  
Desmoplastic Infantile Ganglioglioma/Desmoplastic Infantile Astrocytoma  
DNET  
Diffuse Glioneuronal Tumor With Oligodendroglioma-Like Features and Nuclear Clusters  
Papillary Glioneuronal Tumor  
Rosette-Forming Glioneuronal Tumor  
Myxoid Glioneuronal Tumor  
Diffuse Leptomeningeal Glioneuronal Tumor  
Multinodular and Vacuolating Neuronal Tumor  
Dysplastic Cerebellar Ganglioglioma (Lhermitte-Duclos Disease)  
Central Neurocytoma  
Extraventricular Neurocytoma  
Cerebellar Liponeurocytoma  
Malignant Glioneuronal Tumor

### **Ependymal Tumors**

Supratentorial Ependymoma  
Infratentorial Ependymoma  
Subependymoma

### ***CHOROID PLEXUS TUMORS***

Choroid Plexus Papilloma  
Atypical Choroid Plexus Papilloma  
Choroid Plexus Carcinoma

### ***EMBRYONAL TUMORS***

Medulloblastoma, Molecularly Defined  
Medulloblastoma, Histologically Defined  
Atypical Teratoid/Rhabdoid Tumor  
Embryonal Tumor With Multilayered Rosettes

### ***PINEAL TUMORS***

Pineocytoma  
Pineal Parenchymal Tumor of Intermediate Differentiation

Pineoblastoma  
Papillary Tumor of Pineal Region

*TUMORS OF CRANIAL/PERIPHERAL NERVES*

Vestibular Schwannoma  
Nonvestibular Schwannoma  
Neurofibroma

*HEMATOLYMPHOID TUMORS INVOLVING CNS*

**CNS Lymphomas**

Primary Diffuse Large B-Cell Lymphoma of CNS  
Immunodeficiency-Associated CNS Lymphoma  
Intravascular Large B-Cell Lymphoma  
Lymphomatoid Granulomatosis

**Histiocytic Tumors**

Langerhans Cell Histiocytosis, Skull and Brain  
Erdheim-Chester Disease  
Rosai-Dorfman Disease  
Miscellaneous Histiocytoses

*MENINGIOMA*

Meningioma, CNS WHO Grade 1  
Atypical and Malignant Meningioma

*MESENCHYMAL, NONMENINGOTHELIAL TUMORS INVOLVING CNS*

Miscellaneous Benign Mesenchymal Tumors  
Miscellaneous Malignant Mesenchymal Tumors  
Inflammatory Myofibroblastic Tumor  
Solitary Fibrous Tumor  
Hemangioblastoma

*GERM CELL TUMORS*

Germinoma  
Teratoma  
Miscellaneous Malignant Germ Cell Neoplasms

*METASTATIC TUMORS*

Parenchymal Metastases  
Miscellaneous Intracranial Metastases  
Secondary CNS Lymphoma

*TUMOR-LIKE CONDITIONS*

Ecchordosis Physaliphora  
Calcifying Pseudoneoplasm of Neuraxis (CAPNON)  
Lipoma

## **SECTION 7: PRIMARY NONNEOPLASTIC CYSTS**

Primary Nonneoplastic Cysts Overview  
Arachnoid Cyst  
Colloid Cyst  
Dermoid Cyst  
Epidermoid Cyst  
Neuroglial Cyst  
Periventricular Cyst  
Choroid Fissure Cyst  
Hippocampal Sulcus Remnant Cysts  
Enlarged Perivascular Spaces  
Pineal Cyst  
Choroid Plexus Cyst  
Ependymal Cyst  
Porencephalic Cyst  
Neurenteric Cyst  
Nonneoplastic Tumor-Associated Cysts

## **SECTION 8: INFECTIOUS, INFLAMMATORY, AND DEMYELINATING DISEASE**

CNS Infectious Disease Overview

### *CONGENITAL/NEONATAL INFECTIONS*

TORCH Infections, Overview  
Congenital CMV  
Congenital HIV  
Neonatal Herpes Encephalitis

### *ACQUIRED INFECTIONS*

Group B Streptococcal Meningitis  
Citrobacter Meningitis  
Meningitis  
Abscess  
Ventriculitis  
Empyema  
Herpes Encephalitis  
Miscellaneous Encephalitis  
West Nile Virus Encephalitis  
HHV-6 Encephalitis  
Cerebellitis  
Rasmussen Encephalitis

Subacute Sclerosing Panencephalitis  
Tuberculosis  
Neurocysticercosis  
Hydatid Disease  
Amebiasis  
Cerebral Malaria  
Miscellaneous Parasites  
Fungal Diseases  
Rickettsial Diseases  
Lyme Disease  
Acquired HIV Encephalitis  
Acquired Toxoplasmosis  
Acquired CMV  
Cryptococcosis  
Progressive Multifocal Leukoencephalopathy (PML)  
Miscellaneous JC Virus Infection  
Immune Reconstitution Inflammatory Syndrome (IRIS)  
HIV/AIDS, Miscellaneous Manifestations  
Zika Virus Infection  
Viral Hemorrhagic Fevers  
COVID-19

#### *INFLAMMATORY AND DEMYELINATING DISEASE*

Multiple Sclerosis  
ADEM  
AHLE  
Neuromyelitis Optica Spectrum Disorders  
Myelin Oligodendrocyte Glycoprotein Antibody–Associated Disease (MOGAD)  
Autoimmune Encephalitis  
AIDP-Guillain-Barré Spectrum Disorders  
CIDP  
CLIPPERS  
SLIPPERS  
GFAP Astrocytopathy

#### **SECTION 9: INHERITED METABOLIC/DEGENERATIVE DISORDERS**

Approach to Normal Brain Development and  
Metabolic Disorders

#### *NORMAL VARIANTS*

Hypomyelination

#### *MITOCHONDRIAL DISORDERS*

Mitochondrial Encephalopathies

*LYSOSOMAL DISORDERS*

Mucopolysaccharidoses  
Gangliosidosis (GM2)  
Metachromatic Leukodystrophy  
Globoid Cell Leukodystrophy  
Fabry Disease

*PEROXISOMAL DISORDERS*

Zellweger Syndrome and Peroxisomal Biogenesis Disorders  
X-Linked Adrenoleukodystrophy

*ORGANIC AND AMINOACIDOPATHIES*

Maple Syrup Urine Disease  
Urea Cycle Disorders  
Glutaric Acidemia Type 1  
Canavan Disease  
Alexander Disease  
Miscellaneous Organic/Aminoacidopathies

*MISCELLANEOUS*

Megalencephaly With Leukoencephalopathy and Cysts  
Neurodegeneration With Brain Iron Accumulation (NBIA)  
PKAN  
Huntington Disease  
Wilson Disease

**SECTION 10: ACQUIRED TOXIC/METABOLIC/DEGENERATIVE DISORDERS**

Acquired Toxic/Metabolic Disorders Overview

*TOXIC, METABOLIC, NUTRITIONAL, SYSTEMIC DISEASES WITH CNS MANIFESTATIONS*

Pediatric Hypoglycemia  
Adult Hypoglycemia  
Hyperglycemia  
Kernicterus  
Thyroid Disorders  
Parathyroid Disorders  
Fahr Disease  
Alcoholic Encephalopathy  
Hepatic Encephalopathy  
Uremic Encephalopathy  
Hyperthermic Encephalopathy (Heatstroke)  
Posterior Reversible Encephalopathy Syndrome (PRES)  
Chronic Hypertensive Encephalopathy

Carbon Monoxide Poisoning  
Drug Abuse  
Methanol Poisoning  
Cyanide Poisoning  
Metronidazole Toxicity  
Gadolinium Deposition  
Osmotic Demyelination Syndrome  
Radiation and Chemotherapy  
Pseudoprogession  
Pseudoresponse  
Mesial Temporal Sclerosis  
Status Epilepticus  
Transient Global Amnesia (TGA)  
CHANTER Syndrome

#### *DEMENTIAS AND DEGENERATIVE DISORDERS*

Normal Aging Brain  
Alzheimer Disease  
Vascular Dementia  
Frontotemporal Lobar Degeneration  
Dementia With Lewy Bodies  
Creutzfeldt-Jakob Disease (CJD)  
Parkinson Disease  
Multiple System Atrophy  
Corticobasal Degeneration  
Progressive Supranuclear Palsy  
Amyotrophic Lateral Sclerosis (ALS)  
Wallerian Degeneration  
Crossed Cerebellar Diaschisis  
Hypertrophic Olivary Degeneration  
Spinocerebellar Ataxia  
Fragile X-Associated Tremor/Ataxia (FXTAS)

### **PART II: ANATOMY-BASED DIAGNOSES**

#### **SECTION 1: VENTRICLES AND CISTERNS**

Ventricles and Cisterns Overview

#### *NORMAL VARIANTS*

Cavum Septi Pellucidi (CSP)  
Cavum Velum Interpositum (CVI)  
Benign Enlarged Subarachnoid Spaces

#### *HYDROCEPHALUS*

Intraventricular Obstructive Hydrocephalus  
Extraventricular Obstructive Hydrocephalus  
Aqueductal Stenosis  
Normal-Pressure Hydrocephalus  
CSF Shunts and Complications  
Corpus Callosum Impingement Syndrome

#### *CSF DISORDERS*

Idiopathic Intracranial Hypertension  
Intracranial Hypotension

### **SECTION 2: SELLA AND PITUITARY**

Sella and Pituitary Overview

#### *CONGENITAL*

Pituitary Anomalies  
Hypothalamic Hamartoma  
Rathke Cleft Cyst

#### *NEOPLASMS*

Pituitary Microadenoma/Pituitary Neuroendocrine Tumor  
Pituitary Macroadenoma/Pituitary Neuroendocrine Tumor  
Pituitary Apoplexy  
Adamantinomatous Craniopharyngioma  
Papillary Craniopharyngioma  
Pituicytoma  
Spindle Cell Oncocytoma  
Granular Cell Tumor

#### *MISCELLANEOUS*

Empty Sella  
Pituitary Hyperplasia  
Lymphocytic Hypophysitis

### **SECTION 3: SKULL, SCALP, AND MENINGES**

Skull, Scalp, and Meninges Overview

#### *CONGENITAL*

Congenital Calvarial Defects  
Craniosynostoses  
Cephalocele  
Atretic Cephalocele

#### *NONNEOPLASTIC AND TUMOR-LIKE DISORDERS*

IgG4-Related Disease

Fibrous Dysplasia

Paget Disease

Extramedullary Hematopoiesis

Thick Skull

Neurosarcoid

Sebaceous Cyst

#### NEOPLASMS

Calvarial Venous Vascular Malformation

Dura/Venous Sinuses Venous Vascular Malformation

Multiple Myeloma

Skull and Meningeal Metastases