**DESCRIPTION**

**Comprehensive resource features state-of-the-art brain mapping techniques and pearls from international recognized neurosurgeons Alfredo Quinones-Hinojosa and Kaisorn Chaichana and coeditor Deependra Mahato**

Despite advances in imaging techniques to identify eloquent cortical brain regions and subcortical white matter, brain mapping is the only method for obtaining real-time information with high sensitivity and specificity. This groundbreaking technology greatly enhances the neurosurgeon’s ability to safely resect challenging lesions located in eloquent areas of the brain. *Brain Mapping: Indications and Techniques* by esteemed neurosurgeons Alfredo Quinones-Hinojosa, Kaisorn Chaichana, and Deependra Mahato, is a comprehensive overview of the most critical aspects of brain mapping from leaders in the field.

The book starts with discussion of preoperative aspects, including the history of brain mapping and anatomy of eloquent cortical and eloquent white matter tracts. Subsequent chapters cover perioperative aspects of brain mapping including indirect and direct functional mapping, the role of neurophysiology, awake craniotomy operating room set-up and surgical instruments, and anesthetic considerations. Diverse awake and asleep brain mapping techniques are described for various intracranial pathologies, as well as advances in postoperative recovery of neurological function including physical and speech therapy.

**Key Features**

- Dedicated chapters focused on essential sensory functions cover speech mapping, asleep motor mapping, awake subcortical language mapping, and visual cortex and visual tract mapping
- Disease- and region-specific techniques that encompass extra-operative brain mapping for epilepsy, surgery mapping for insular tumors, seizure mapping, and brainstem and spinal cord mapping
- Clinical pearls on postoperative issues such as rehabilitation, emergence of DBS-evoked functional connectomics, brain neuroplasticity, and radiating eloquent areas
High-quality illustrations and videos enhance understanding of brain regions targeted in different mapping techniques.


**COMPETITION**  

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Part 1: Brain Anatomy and Pathology  
1 The Early History of Intraoperative Brain Mapping  
2 Anatomy of Eloquent Cortical Brain Regions  
3 Anatomy of Eloquent White Matter Tracts  
Part 2: Preoperative Mapping Adjuncts  
4 Direct Functional Mapping Using Radiographic Methods (fMRI and DTI)  
5 Indirect Functional Mapping Using Radiographic Methods  
6 Neurophysiology of Identifying Eloquent Regions  
7 Extraoperative Mapping for Epilepsy Surgery: Epilepsy Monitoring, Wada, and Electrocorticography  
8 Neuropsychologist's Role in the Management of Brain Tumor Patients  
Section II: Intraoperative Brain Mapping  
Part 1: Awake  
9 Awake Craniotomy Operating Room Setup and Surgical Instruments  
10 Anesthetic Considerations for Intraoperative Cerebral Brain Mapping  
11 Speech Mapping  
12 Motor Mapping (Rolandic, Pre-Rolandic, and Insular Cortex)  
13 Awake Subcortical Mapping of the Ventral and Dorsal Streams for Language  
14 Surgery Around the Command and Control Axis: The Default Mode, Control, and Frontal Aslant Systems  
15 Mapping and Surgery of Insular Tumors  
16 Mapping of the Visual Pathway  
17 Seizure Mapping Surgery  
Part 2: Asleep  
18 Asleep Motor Mapping  
19 Brainstem and Spinal Cord Mapping  
Section III: Postoperative Brain Mapping for Recovery of Function  
20 Importance of Rehabilitation after Eloquent Brain Surgery  
22 Neuroplasticity and Rewiring of the Brain  
23 Radiating in Eloquent Regions