

# Jasper Basic Mechanisms Of The Epilepsies Contemporary Neurology 80: Unlocking the Secrets of Seizure Genesis



Epilepsy, a neurological disorder characterized by recurrent seizures, affects millions worldwide. Understanding the underlying

mechanisms of these seizures is crucial for developing effective treatments. "Jasper's Basic Mechanisms of the Epilepsies" (Contemporary Neurology 80), an authoritative text, provides a comprehensive exploration of the biological and molecular processes responsible for seizure generation and propagation.



## Jasper's Basic Mechanisms of the Epilepsies (Contemporary Neurology Series Book 80) by Tzivia Gover

★★★★★ 5 out of 5  
Language : English  
File size : 37576 KB  
Lending : Enabled  
Screen Reader : Supported  
Print length : 1264 pages



### **Chapter 1: Historical Perspective and Classification**

The book begins by delving into the historical evolution of epilepsy research and the current classification systems used to categorize seizures and epilepsy syndromes. This chapter provides a foundation for understanding the complexities of epilepsy and its clinical manifestations.

### **Chapter 2: Cellular and Molecular Basis of Neuronal Excitability**

To grasp the mechanisms of seizure initiation and propagation, Chapter 2 examines the fundamental properties of neurons, their excitability, and the molecular machinery involved in neurotransmission. This understanding forms the basis for comprehending the imbalances that lead to hyperexcitability and seizures.

### **Chapter 3: Synaptic Plasticity and Network Synchrony**

Synaptic plasticity, the ability of synapses to change their strength over time, plays a critical role in learning and memory. In Chapter 3, the book explores the implications of synaptic plasticity in the context of epilepsy, emphasizing its contribution to network hyperexcitability and seizure susceptibility.

### **Chapter 4: Neurochemical Mechanisms of Seizures**

Neurotransmitters, chemical messengers that facilitate communication between neurons, exert significant influence on neuronal excitability. Chapter 4 investigates the role of various neurotransmitter systems, including glutamate, GABA, and others, in the generation and spread of seizures.

### **Chapter 5: Genetic Basis of Epilepsy**

Genetic factors significantly contribute to epilepsy development. Chapter 5 reviews the current understanding of the genetic architecture of epilepsy, discussing both inherited and acquired genetic abnormalities associated with the disorder.

### **Chapter 6: Neuroimaging in Epilepsy**

Neuroimaging techniques, such as electroencephalography (EEG), magnetic resonance imaging (MRI), and functional neuroimaging, provide valuable insights into brain activity patterns and structural abnormalities in epilepsy. Chapter 6 explores the utility of neuroimaging in diagnosing, localizing, and characterizing epileptic foci.

### **Chapter 7: Animal Models of Epilepsy**

Animal models have been instrumental in advancing our understanding of epilepsy mechanisms. Chapter 7 discusses various animal models used to study seizures, their advantages, and limitations, highlighting their contributions to unraveling the complexities of the disorder.

## **Chapter 8: Pharmacological Treatment of Epilepsy**

Pharmacological therapy remains the mainstay of epilepsy management. Chapter 8 provides an overview of the classes of antiepileptic drugs (AEDs), their mechanisms of action, and considerations for their use in different types of epilepsy.

## **Chapter 9: Surgical Treatment of Epilepsy**

For patients who do not respond to pharmacological therapy, surgical intervention may be considered. Chapter 9 explores the surgical options available for epilepsy, including resection, ablation, and neuromodulation, discussing their efficacy and potential risks.

## **Chapter 10: Ketogenic Diet and Other Non-Pharmacological Therapies**

Beyond medications and surgery, other non-pharmacological approaches can complement epilepsy management. Chapter 10 delves into the ketogenic diet, vagus nerve stimulation, and other emerging therapies, examining their potential benefits and limitations.

"Jasper's Basic Mechanisms of the Epilepsies" (Contemporary Neurology 80) is an indispensable resource for neurologists, epileptologists, neuroscientists, and medical students seeking a comprehensive understanding of epilepsy mechanisms. This authoritative text provides a profound exploration of the biological, molecular, genetic, and

neurochemical underpinnings of seizures, empowering readers with the knowledge to



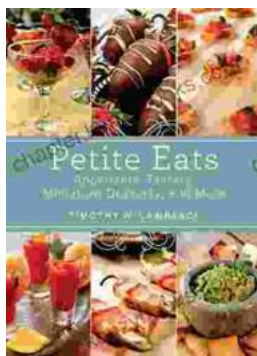
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