### Number of questions: 220

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<th>Topic</th>
<th>Percentage</th>
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<tr>
<td>1. Clinical aspects of epilepsies</td>
<td>8-12%</td>
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<td>2. Routine EEG</td>
<td>16-20%</td>
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<td>3. Evaluation</td>
<td>23-27%</td>
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<td>4. Management</td>
<td>38-42%</td>
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<td>5. System-based practice issues</td>
<td>1-3%</td>
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<td>6. Mechanisms of the epilepsies</td>
<td>4-6%</td>
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<td><strong>TOTAL</strong></td>
<td><strong>100%</strong></td>
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**Note:** A more detailed content outline is shown below.
### Content Areas

#### Clinical aspects of epilepsies

**A. Classification of seizures**

1. **Generalized**
   - a. Tonic-clonic (in any combination)
   - b. Absence
     - i. Typical
     - ii. Atypical
     - iii. Absence with special features
       - a) Myoclonic absence
       - b) Eyelid myoclonia
   - c. Myoclonic
     - i. Myoclonic
     - ii. Myoclonic atonic
     - iii. Myoclonic tonic
     - iv. Myoclonic-tonic-clonic (clonic-tonic-clonic)
   - d. Clonic
   - e. Tonic
   - f. Atonic

2. **Focal onset**
   - a. Without impairment of consciousness/responsiveness
     - i. With observable motor or autonomic components (roughly corresponds to the concept of focal aware with motor onset (simple partial) seizure)
     - ii. Nonmotor onset involving subjective sensory or psychic phenomena only (corresponds to the concept of focal aware with non-motor onset (complex partial) seizure)
### iii. Focal to bilateral tonic clonic

**b.** With impairment of consciousness/ responsiveness (roughly corresponds to the concept of focal impaired awareness (complex partial) seizure)

**c.** Evolving to a bilateral, convulsive seizure (involving tonic, clonic, tonic and clonic, or focal to bilateral tonic-clonic (secondarily generalized) components)

### 3. May be focal, generalized, or unclear

**a.** Epileptic spasms

**b.** Atonic

### B. Electro-clinical syndromes and other epilepsies

#### 1. By age of onset

**a.** Neonatal period

**i.** Self-limited neonatal seizures (benign familial neonatal seizures (BFNS))

**ii.** Self-limited familial neonatal epilepsy

**iii.** Symptomatic neonatal seizures

**iv.** Early myoclonic encephalopathy (EME)

**v.** Early infantile epileptic encephalopathy (Ohtahara syndrome)

**vi.** Other early infantile epileptic encephalopathy (EIEE)

**b.** Infancy

**i.** Epilepsy of infancy with migrating focal seizures (migrating partial seizures of infancy)

**ii.** West syndrome

**iii.** Myoclonic epilepsy in infancy (MEI)

**iv.** Self-limited non-familial infantile epilepsy (benign infantile seizures)

**v.** Self-limited familial infantile epilepsy (benign familial infantile seizures)

**vi.** Severe myoclonic epilepsy of infancy (Dravet syndrome)
| vii. | Myoclonic encephalopathy in non-progressive disorders |
| viii. | Hemiconvulsion-hemiplegia-epilepsy syndrome |
| c. | Childhood (1-15 years) |
| i. | Febrile seizures plus, genetic epilepsy with febrile seizures plus (febrile seizures (FS+) (can start in infancy)) |
| ii. | Panayiotopoulos syndrome (early onset benign childhood occipital epilepsy) |
| iii. | Epilepsy with myoclonic-atactic seizures (epilepsy with astatic seizures, or Doose syndrome) |
| iv. | Childhood (benign) epilepsy with centrotemporal spikes (CECTS) |
| v. | Autosomal dominant nocturnal frontal lobe epilepsy (ADNFLE) |
| vi. | Late-onset childhood occipital epilepsy (Gastaut type) |
| vii. | Epilepsy with myoclonic absences (Tassinari syndrome) |
| viii. | Lennox-Gastaut syndrome |
| ix. | Epileptic encephalopathy with continuous spike-and-wave during sleep (CSWS) |
| x. | Childhood absence epilepsy (CAE) |
| xi. | Acquired epileptic aphasia (Landau-Kleffner syndrome (LKS)) |
| d. | Adolescence to Adult |
| i. | Juvenile absence epilepsy (JAE) |
| ii. | Juvenile myoclonic epilepsy (JME) |
| iii. | Epilepsy with generalized tonic-clonic seizures alone |
| iv. | Autosomal dominant (partial) epilepsy with auditory features (ADPEAF) |
| v. | Other familial temporal lobe epilepsies |
| C. | Less specific age relationship |
| 1. | Familial focal epilepsy with variable foci (childhood to adult) |
| 2. | Reflex epilepsies |
3. Progressive myoclonus epilepsies (PME)

D. Distinctive constellations

1. Mesial temporal lobe epilepsy with hippocampal sclerosis (MTLE with HS)
2. Rasmussen syndrome
3. Focal emotional (gelastic) seizures with hypothalamic hamartoma

E. Epilepsies attributed to and organized by structural-metabolic causes

1. Structural (including tumors, vascular malformations)
2. Infection
3. Trauma
4. Perinatal insults
5. Stroke
6. Malformations of cortical development
   a. Neurocutaneous disorders
7. Mitochondrial and metabolic disorders
8. Autoimmune/paraneoplastic/inflammatory

F. Epilepsies of unknown cause

G. Conditions with epileptic seizures traditionally not diagnosed as a form of epilepsy

1. Benign neonatal seizures (BNS)
2. Febrile seizures (FS)

H. Nonepileptic paroxysmal disorders

1. Syncope and anoxic seizures
   a. Vasovagal syncope
   b. Reflex anoxic seizures
   c. Breath-holding attacks
   d. Hyperventilation syncope
   e. Compulsive valsalva
   f. Neurological syncope
   g. Imposed upper airways obstructions
   h. Orthostatic intolerance
### 20. Behavioral, psychological, and psychiatric disorders

- **a.** Daydreaming/inattention
- **b.** Self gratification
- **c.** Eidetic imagery
- **d.** Tantrums and rage reactions
- **e.** Out of body experiences
- **f.** Panic attacks
- **g.** Dissociative states
- **h.** Nonepileptic seizures
- **i.** Hallucinations in psychiatric disorders
- **j.** Fabricated/factitious illness

### 3. Sleep related conditions

- **a.** Sleep related rhythmic movement disorders
- **b.** Hypnogogic jerks
- **c.** Parasomnias
- **d.** REM sleep disorders
- **e.** Benign neonatal sleep myoclonus
- **f.** Periodic leg movements
- **g.** Narcolepsy-cataplexy

### 4. Paroxysmal movement disorders

- **a.** Tics
- **b.** Stereotypies
- **c.** Paroxysmal kinesigenic dyskinesia
- **d.** Paroxysmal nonkinesigenic dyskinesia
- **e.** Paroxysmal exercise induced dyskinesia
- **f.** Benign paroxysmal tonic upgaze
- **g.** Episodic ataxias
- **h.** Alternating hemiplegia
- **i.** Hyperekplexia
- **j.** Opsoclonus-myoclonus syndrome

### 5. Migraine associated disorders

- **a.** Migraine with visual aura
- **b.** Familial hemiplegic migraine
### 6. Miscellaneous events

- Benign myoclonus of infancy and shuddering attacks
- Jitteriness
- Sandifer syndrome
- Non-epileptic head drops
- Spasmus nutans
- Raised intracranial pressure
- Paroxysmal extreme pain disorder

### I. Epidemiology

### J. Status epilepticus (SE)

1. Convulsive
2. Myoclonic
3. Focal motor
4. Tonic status
5. Hyperkinetic
6. Nonconvulsive with coma
7. Nonconvulsive without coma
8. Refractory and super-refractory

### 02. Routine EEG

- Normal
  1. Activation and procedures
  2. Benign variants
  3. Artifacts and technical issues

- Interictal epileptiform patterns

- Ictal patterns (localization, status, hypsarrhythmia, ictal neonatal seizures)

- Encephalopathic patterns

### 03. Evaluation

- History, examination, and semiology
- Chemical and metabolic screening
- Specialized EEG
### 1. Other supplementary and ambulatory

#### 2. Video EEG

#### 3. Invasive EEG recordings
   - a. Stereo EEG and other depth electrodes
   - b. Subdural grid electrodes
   - c. Corticography
     - i. Functional mapping

### D. Imaging

#### 1. Choice of structural imaging (CT, MRI)
   - a. Specific protocols

#### 2. Functional imaging
   - a. SPECT
   - b. PET
   - c. MEG
   - d. MRS
   - e. fMRI
   - f. Diffusion tensor imaging

#### E. Neuropsychological testing

#### F. Spinal fluid analysis (lumbar puncture)

#### G. Genetic analysis

### 04. Management

#### A. Principles of management

   1. History of new-onset seizure(s)
   2. Acute seizure management
   3. Monotherapy vs. polytherapy
   4. Anti-seizure drug selection
   5. Dosing and drug monitoring
   6. Special situations
      - a. Neonate
      - b. Developmental delay
      - c. Cognitively impaired
d. Elderly
e. Systemic illness
  i. Hypoxia-ischemia

7. Gender issues in epilepsy
   a. Fertility and impotence
   b. Catamenial epilepsy
   c. Epilepsy in pregnancy

8. Discontinuation of medication

B. Anti-seizure therapies
   1. Specific drugs (regular and extended-release formulations)
      a. Acetazolamide
      b. ACTH
      c. Carbamazepine
      d. Clonazepam
      e. Clorazepate
      f. Diazepam (oral and rectal gel)
      g. Divalproex sodium
      h. Ethosuximide
      i. Felbamate
      j. Gabapentin
      k. Lacosamide
      l. Lamotrigine
      m. Levetiracetam
      n. Lorazepam
      o. Oxcarbazepine
      p. Phenytoin
      q. Phenytoin
      r. Pregabalin
      s. Primidone
      t. Rufinamide
      u. Tiagabine
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<td>Topiramate</td>
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2. **Mechanisms of action of above drugs**

3. **Drug interactions (pharmacokinetic/pharmacodynamic)**

4. **Drug toxicities and teratogenicity**

5. **Monitoring principles**

6. **Other therapies**
   a. **Diet therapies**
      i. Indications
      ii. Patient selection
      iii. Monitoring
      iv. Duration
   b. **Hormonal therapies**
      i. ACTH
      ii. Other steroidal therapies
   c. **Immunoglobulin therapy**
   d. **Vagus nerve stimulation**
   e. **Other forms of stimulation**
   f. **Alternative and complementary therapies**

C. **Surgical therapies**
1. Indications for referral
   a. Definition of intractable epilepsies
   b. Duration of epilepsy and failure of response to medication
2. Evaluation for possible surgery
   a. Wada testing and special neuropsychological evaluation
3. Types of surgical procedure
   a. Focal resections
      i. Temporal lobe
      ii. Frontal lobe
      iii. Parieto-occipital
   b. Hemispherectomies
      i. Neocortical
      ii. Standard anterior temporal lobectomy
      iii. Selective mesial resections
   c. Multiple subpial transections
   d. Corpus callosotomies
   e. Repeat surgical procedures
   f. Other
4. Complications of surgery
   a. Outcome
D. Status epilepticus
   1. Acute management
   2. Drug therapy
      a. First-line
      b. Second-line
      c. Third-line
   3. Anesthetic therapies
   4. Continuous EEG monitoring
   5. Systemic complications
   6. Outcome
E. Psychosocial management
1. Patient and family education
   a. Drug information
   b. Compliance
   c. Safety issues
      i. Sleep deprivation
      ii. Sports participation
      iii. Drug and alcohol risks
      iv. Driving regulations
      v. Piloting regulations
      vi. Bathing
2. School and work situations
   a. IEPs
   b. ADA
   c. Disability
3. Quality of life
   a. Dating
   b. Marriage
   c. Stigma
4. Sleep and epilepsy
5. Prognosis and counseling

F. Comorbidities
   1. Psychiatric issues
   2. Cognitive issues
   3. Mortality (SUDEP)
   4. Migraine
   5. Medical complications
   6. Sleep

05. Systems-based practice issues
    A. Public policy issues (education, driving, research funding)
    B. Working with educational systems
    C. Employment issues
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**06. Mechanisms of the epilepsies**

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<td>B.</td>
<td>Physiological basis of epileptic EEG patterns</td>
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<td>C.</td>
<td>Pathology of the epilepsies</td>
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**TOTAL**