

International Epilepsy Day

MONDAY, FEBRUARY 9TH, 2026 IS INTERNATIONAL EPILEPSY DAY!

Epilepsy in Common Special Situations in Adult.

Dr Md Mizanur Rahman

Assistant professor (Neurology), Insitu

Department of Neurology

Kushtia Medical College Hospital, kushtia

Outlines of Discussion

- **Epilepsy in Women:**
  - **-Pregnancy and lactation**
  - **-Pregnancy and delivery**
  - **-Puerperium**
  - **-Breast feeding**
  - **-Menstruation and Epilepsy**
- **Epilepsy in liver Disease:**
- **Cardiovascular disease**
- **Lung Disease**
- **Anaesthesia**
- **Infection**
- **Stroke**
- **Elderly**
- **Driving & epilepsy**

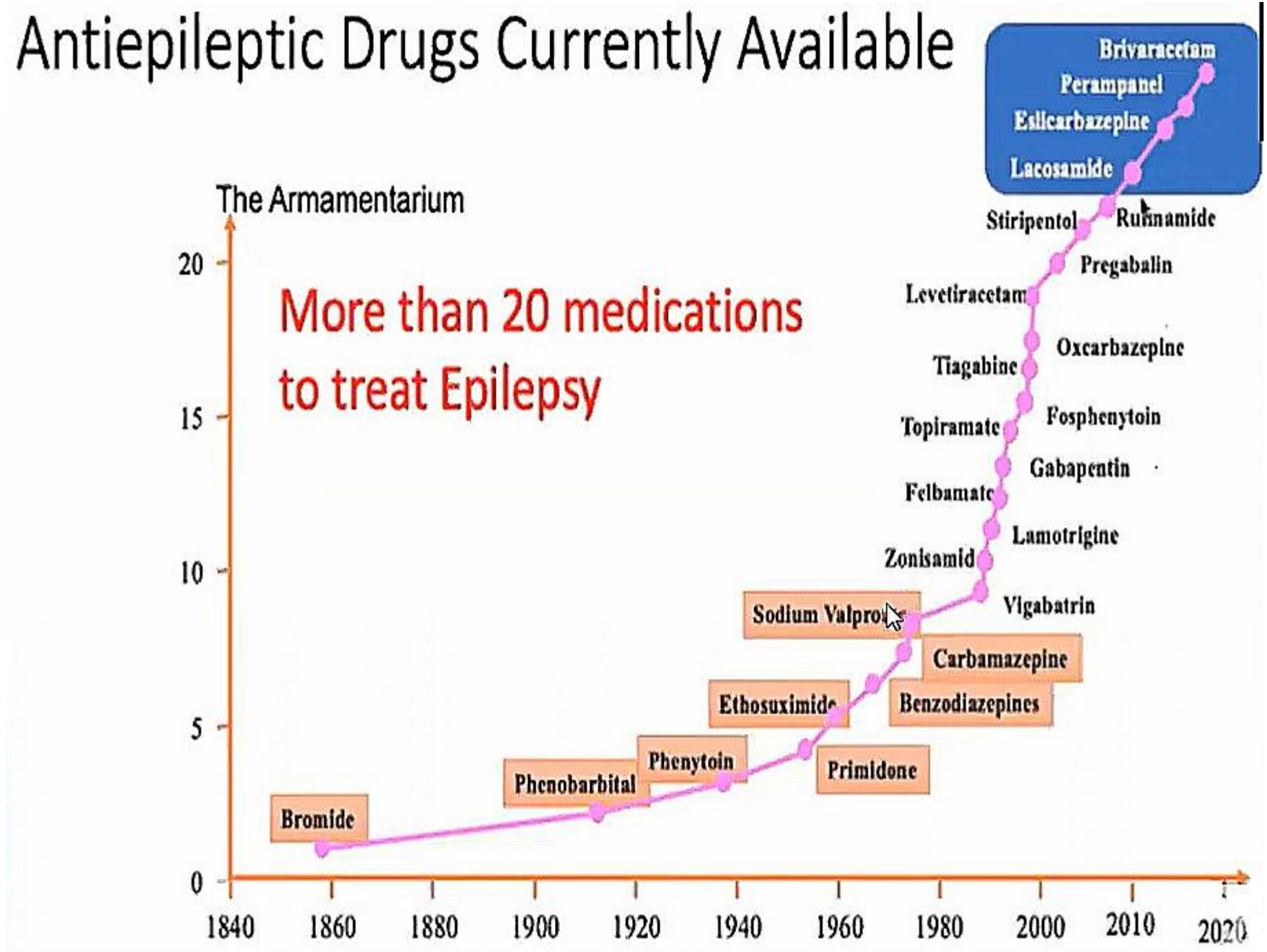
Epilepsy is a disease of the brain defined by any of the following conditions:

1. At least two unprovoked (or reflex) seizures occurring >24 h apart

2. One unprovoked (or reflex) seizure and a probability of further seizures similar to the general recurrence risk (at least 60%) after two unprovoked seizures, occurring over the next 10 year

3. Diagnosis of an epilepsy syndrome

Antiepileptic Drugs Currently Available



Pregnancy and lactation

- Women with epilepsy have approximately 15% fewer children than expected
- Decrease fertility due to
    - Social effect of epilepsy
    - Effect of some antiepileptic medication on the ovaries
    - Effect of seizure on reproductive hormones
    - Menstrual irregularity

Effect of pregnancy on the rate of seizure

- 50% remain seizure free
- 25% increases the seizure frequency
- 25% decreases the seizure frequency

Cont..

- Maternal mortality is higher than general population.
- **Trauma** is the leading non obstetric cause
- Effect of pregnancy on seizure occurrence predicted from the control of epilepsy during the **12 months preceding gestation**.
- Women at least one seizure in a month expected to have more seizure during pregnancy

Cont..

- Less than one seizure in a month usually do not experience increase in seizure rate.
- Women with **focal epilepsy** have higher rate of seizure worsening during pregnancy compared with generalized epilepsy.
- **Frontal lobe epilepsy** have increased rate of seizure worsening during pregnancy and post partum.

Cont…

- **Increases** the seizure **frequency due to** :

  -Hormonal effect

  -Psychological factor

  -Alter protein binding of many AEDs

  -Non compliance with medication

  -Changing drug serum level

  -Vomiting, stress

  -Sleep deprivation

Effect of epilepsy on pregnancy and delivery

- Epilepsy increase **three fold the risk** of various pregnancy related complication
- Common **complications** are:
    - Bleeding in utero e.g APH
    - Miscarriage and still birth
    - Premature separation of placenta
    - IUGR and LBW
    - Premature labor

Cont..

- Serum **level of most of the AEDs fall** particularly during pregnancy
- Modification of drug dosage needs in all patients
- 1st 2nd and 3rd trimester drug level measurement is needed

Cont..

- Choice of AED-

  -**Many of the AED medication** are associated with congenital malformation in fetus

  - Planned pregnancy is need

  -**Levetiracetam, Carbamazepine, lamotrigine, oxcarbazepine**

  are safest drug

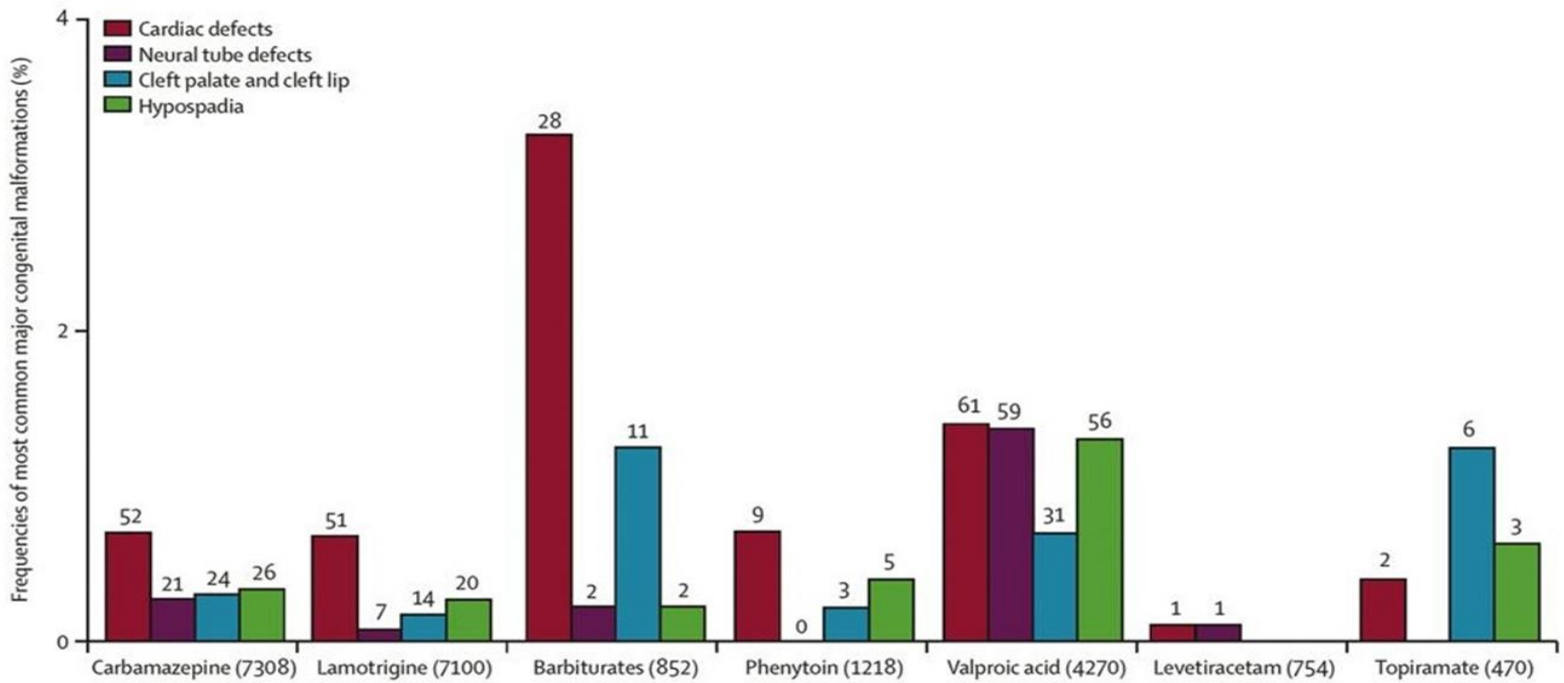


FIGURE 6-8

Common major congenital malformations associated with in utero monotherapy exposure. Total number of exposed fetuses or infants are shown in parentheses with the number of those with specific malformations shown on top of the bars.

Reprinted with permission from Tomson T, et al, Lancet Neurol.[52] © 2016 Elsevier Ltd.

Cont..

- Screening for fetal malformation

  -High resolution ultrasound

  Time- 10, 18, 24 weeks

To exclude

  -spina bifida, cardiac abnormalities, limb defect

Cont..

Folic acid supplementation:

- Folic acid supplementation before (3 months) and during pregnancy up to 12 weeks

  -DOSE: 4mg/daily

Vitamin K supplementation:

-Oral vitamin-K 20mg daily in last month to mother

-1ml IM at birth and 28 days to newborn

Cont..

Management during labor:

- Institutional delivery is need
- Regular AEDs should be continued
- **Clobazam 10mg** take at 2nd stage of labor to prevent tonic –clonic seizure during delivery.
- Fetal monitoring is need.
- Most women have NVD, elective LUCS in indicated in women with risk or obstetric indication

Cont..

Puerperium:

- During post partum period most of the AED level returned to its previous level

  So, doses of drugs level should be reduced to previous level.

Cont..

Fetal Consideration:

- Most of the isolated seizure are harmless.
- Status epilepticus during pregnancy carries 50% chance of infant mortality
- Convulsive seizure carries the risk of trauma to placenta and fetus and also precipitate labor.

Cont..

Fetal hydantoin syndrome:

- Mid facial hypoplasia
- Long upper lip
- Low birth weight
- Cleft lip and plate
- Digital hypoplasia

Occurs with carbamazepine, valproic acid, primidone

Cont..

Breast feeding:

Breast milk transmission

- Levetiracetam
- Gabapentin
- Lamotrigine
- Topiramate

Do not significantly accumulate in breast milk

- Valproate
- Phenobarbital
- Carbamazepine
- Phenytoin

- Women with epilepsy, particularly those taking **benzodiazepines or barbiturates** should be counseled to monitor their babies for **sedation**
- **Recommendation:**

Breast feeding is safe while taking antiseizure medications

Oral contraceptive & Epilepsy

- Avoid hepatic enzyme inducers

- Carbamazepine, Oxcarbazepine, Phenytoin, Barbiturates reduces efficacy of OCPs

- **Valproate, Lamotrigine,** Gabapentin, **Levetiracetam,** Tiagabine, **Topiramate** do not induce hepatic enzymes

Menstruation and Epilepsy

- **Cataminial Epilepsy**

  Cataminial exacerbation of seizure occurs few days preceding menstruation

- **Management**:

  Clobazam 20mg daily for 7 days preceding menstruation

  Acetazolamide also recommended

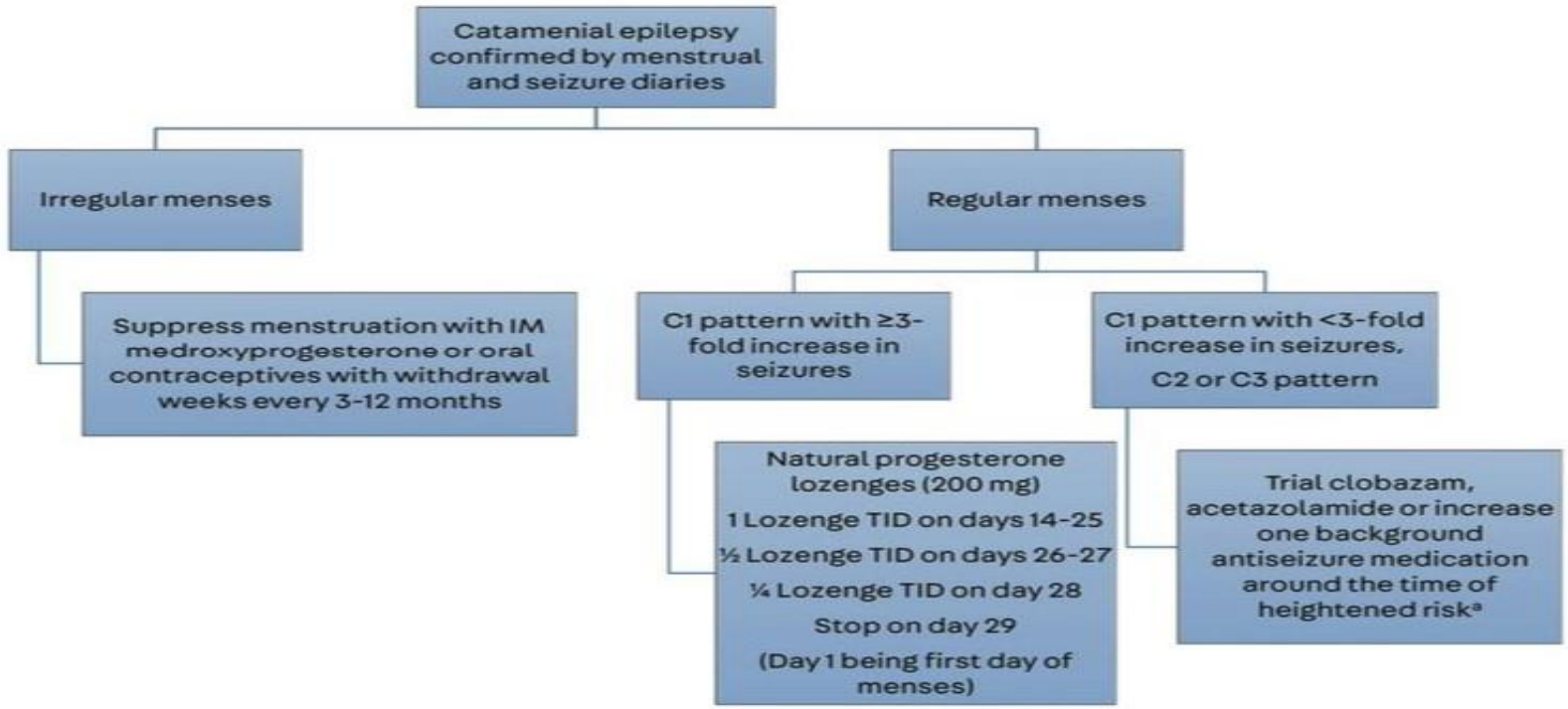


FIGURE 6-3

Approach to the treatment of catamenial epilepsy.

IM = intramuscular; TID = 3 times a day.

[a] Avoid with drugs prone to toxicity like phenytoin.

Data from Navis A and Harden C, Curr Treat Options Neurol[16] and Vélez-Ruiz NJ and Pennet PB, Neurol Clin.[17]

Epilepsy in liver Disease:

- Patients with liver cirrhosis & epilepsy have **higher mortality** than other patients with cirrhosis

- Epilepsy is a risk factor for developing **hepatic encephalopathy**

Cont..

- **Mild hepatic dysfunction** not necessary to adjust the AED dose.
- **Valproic acid** is contra indicated because of its hepatotoxicity.
- **Levetiracetam** most recommended in acute phase of epileptic seizure with liver disease.
- **Levetiracetam, oxcarbazepine, topiramate** are the most recommended in chronic liver disease
- In severe liver disease necessary to **adjust the dose** of these AEDs

Renal Disease

- In renal disease, AEDs that are mainly eliminated by the kidney tend to accumulate in the blood and longer half life
- In acute settings **Levetiracetam** is contraindicated if CrCl <30 ml/min
- **Levetiracetam, lamotrigine, oxcarbazepine, Topiramate, phenobarbital** dose adjustment will be need in CKD
- The most recommanded drug in **CKD and Hemodialysis** are **Phenytoin Carbamazepine, Valproic acid, Benzodiazepine**

Cardiovascular disease

- **Valproic acid, Levetiracetam & BZD** is recommended
- In acute settings **IV Phenytoin** can cause arrhythmia & Hypotension
- **Carbamazepine, Oxcarbazepine, Pregabalin** use cautiously

Lung Disease

- **Barbiturates, BZD, Phenytoin** can cause respiratory depression
- **Levetiracetam** is effective in this situation

Anaesthesia

- **Epilepsy with anaesthesia:patients with epilepsy** can safely under anaesthesia with cautions.
- **key considerations:**

#preoperative:maintain therapeutic level of AEDs and minimize anxiety.

 # Anaesthetic choice: Safe / preferred - propofol, thiopental, benzodiazepine (midazolam), Avoid: ketamine, Enflurane & methohexital.

#Intraoperative: seizure is rare.

#Postperative: Resume oral antiseizure medication as soon as possible.Pseudosizure can occure in post operative phase.

Infection

- Interaction between AEDs and anti infective agent
- Treatment of **neurocysticercosis** enzyme inducing drugs reduce concentration of **paraziquantel** and **albendazole**
- **Isoniazid** inhibit the metabolism of **carbamazepine, phenytoin** and **valproic acid** causes toxicity
- **Rifampicin** reduce plasma level of **carbamazepine, Lamotrigine, Phenobarbital, Phenytoin.**

Stroke

- Conventional AEDs such as **Benzodiazepine, carbamazepine, Phenytoin, Valproic acid** are **less recommended** in patient with stroke

(delay in functional recovery and interaction with salicylates and antic coagulants)

- Recent AEDs such as **levetiracetam, Lamotrigine, oxcarbazepine** do not show interaction with antiplatelet and anti coagulant, and do not affect functional prognosis.

Mental disability

- Higher incidence of epilepsy amongst patients with mental disabilities than in general population
- **Mono therapy** should be used if possible
- Drugs with sedative effect and cognitive decline **should be avoided** for long term treatment. Ex: **Benzodiazipine, Carbamazepine, phenytoin, phenobarbital**
- **Levetiracetam, Lamotrigine, oxcarbazepine, Valproic acid** is **recommended** due to lower rate of cognitive adverse effect
- **Carbamazepine, oxcarbazepine, phenytoin, phenobarbital** should be avoid in **impaired gait and coordination**

Elderly

- Stroke and occult vascular disease is a common cause of seizure in elderly
- Acquired cause is more likely
- **Mono therapy** is preferred
- Start low dose and increase slowly
- **Levetiracetam, lamotrigine** are the most suitable AEDs

Driving & epilepsy

- Patient who is newly diagnosed and being started on medication is advised to stop driving for 6-12 months
- **Driving is permitted**

  2-3 years of seizure free interval with patients on AEDs

  2-3 years of seizure free interval after withdrawal of AEDs

Co-morbid condition	Potentially beneficial for co-morbid condition	Potentially harmful for co-morbid condition
Epilepsy + Migraine	Valproate, Topiramate	
Epilepsy + Obesity	Topiramate, zonisamide	Valproate > gabapentin, pregabalin
Epilepsy + RLS/PLMS	Gabapentin	
Epilepsy + Renal stones		Topiramate, zonisamide
Epilepsy + Hyponatraemia		Oxcarbazepine > carbamazepine
Epilepsy + Multiple or severe prior allergy/rash		Carbamazepine, lamotrigine, phenytoin > oxcarbazepine, phenobarbital, zonisamide

Co- morbid condition	Potentially beneficial for co-morbid condition	Potentially harmful for co-morbid condition
Epilepsy + Bipolar disorder	Carbamazepine, lamotrigine, valproate	
Epilepsy + Cognitive Impairment/ Dementia	Gabapentin, Lamotrigine, Levetiracetam	Phenobarbitone, Topiramate, Zonisamide
Epilepsy + Depression	SSRIs Citalopram, Sertraline, Fluoxetine SNRIS Duloxetine, Venlafaxine Mood stabilizing drugs (Carbamazepine, Valproate, Lamotrigene)	Tricyclic antidepressants Negative effect on mood (Topiramate, Gabapentin Phenobarbitone, Levetiracetam)
Epilepsy + Psychosis	Quitapine	Risperidone, Olanzapine, (May increase seizures), Topiramate, Zonisamide (May worsen psychosis)

AGENTS REPORTED TO INDUCE SEIZURES

Analgesics	**Tramadol, fentanyl, mefenamic acid**
Antibiotics	**metronidazole, nalidixic acid, Ampicillin, carbenicillin, penicillin**
Antidepressants	**Amitriptyline, bupropion, doxepin, fluoxetine, imipramine, maprotiline, mianserin, nomifensine, nortriptyline, paroxetine, sertraline, trazadone, venlafaxine**
Antipsychotics	**Clozapine, clomipramine, chlorpromazine, fluphenazine, haloperidol, olanzapine, perphenazine, pimozide, prochlorperazine, quetiapine, respiridone, thioridazine, trifluoperazine**
Bronchial agents	**Aminophylline, theophylline**
Others	**Alcohol, amphetamines, anticholinergics, antihistamines, aqueous iodinated contrast agents, atenolol, baclofen, chloroquine**



International Epilepsy Day

MONDAY, FEBRUARY 9TH, 2026 IS INTERNATIONAL EPILEPSY DAY!

- **The official theme for International Epilepsy Day* 2026** is ***Turning Stories into Actions***. While the 2025 theme(My Epilepsy Journey) focused on sharing personal experiences and identifying unmet needs,the 2026 campaign is designed to move beyond story telling toward making concrete, measurable improvement for the epilepsy community.

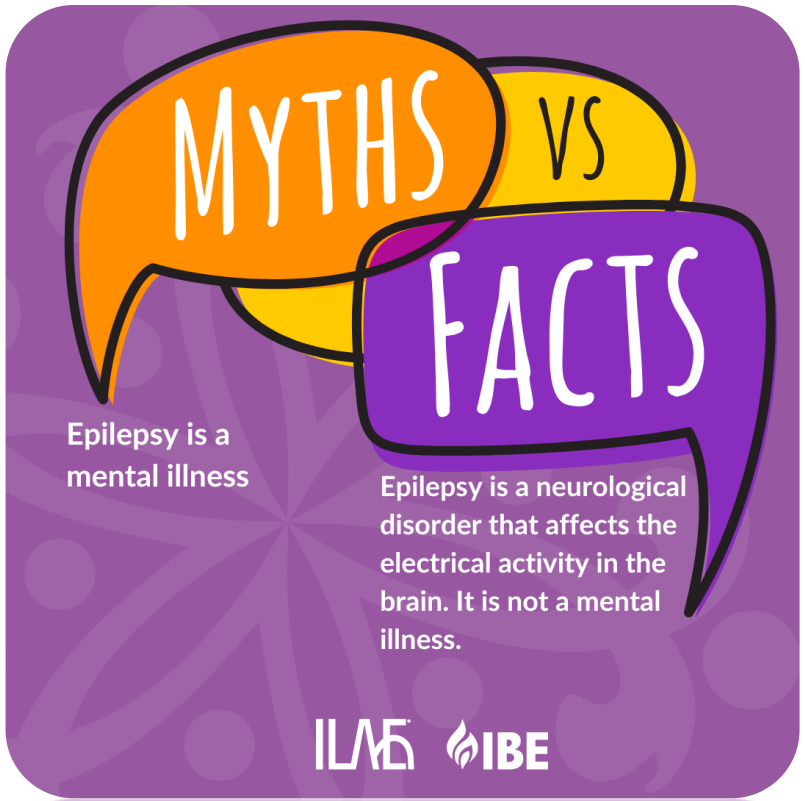
- **The Epilepsy Pledge of 2026:**

  Key Aspects :#Goal: To move beyond awareness to active,tangible support for the 50 million+ people living with epilepsy.

  #Duration: It is a year-long commitment to be completed by the end of 2026.

  # Actionable Example:1. Learnable First Aid: committing to learn how to assist someone during a seizure, **2.Education:**Challenging myths and raising awareness about epilepsy in communities or school.**3 Advocacy:** Using respectful,person –first language,

  Target Audience: The pledege is for everyone,including familis,workplace ,schools and individuals.


MYTHS VS FACTS
Epilepsy is a mental illness
Epilepsy is a neurological disorder that affects the electrical activity in the brain. It is not a mental illness.
ILAE IBE


MYTHS VS FACTS
Epilepsy limits a person's activities
With the right treatment and support people with epilepsy can work, go to school, drive, and pursue hobbies.
ILAE IBE


MYTHS VS FACTS
Epilepsy is contagious
Epilepsy is not contagious and cannot be spread from person to person like an infection.
ILAE IBE

Epilepsy is treatable!



Possible to lead a active life with epilepsy!

International Epilepsy Day

#ENDSTIGMA

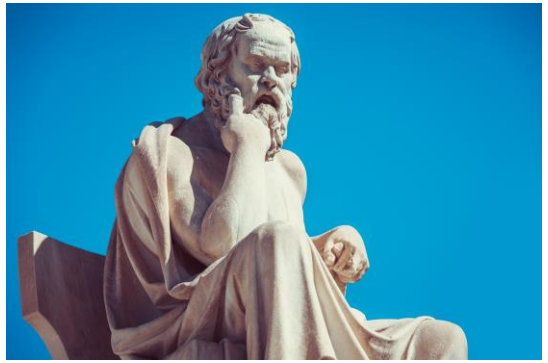
DID YOU KNOW?

While seizures may limit certain activities, many people with epilepsy can lead active, fulfilling lives. People with epilepsy can work, go to school, drive, and enjoy a variety of hobbies with the right treatment and support.

ILAE IBE



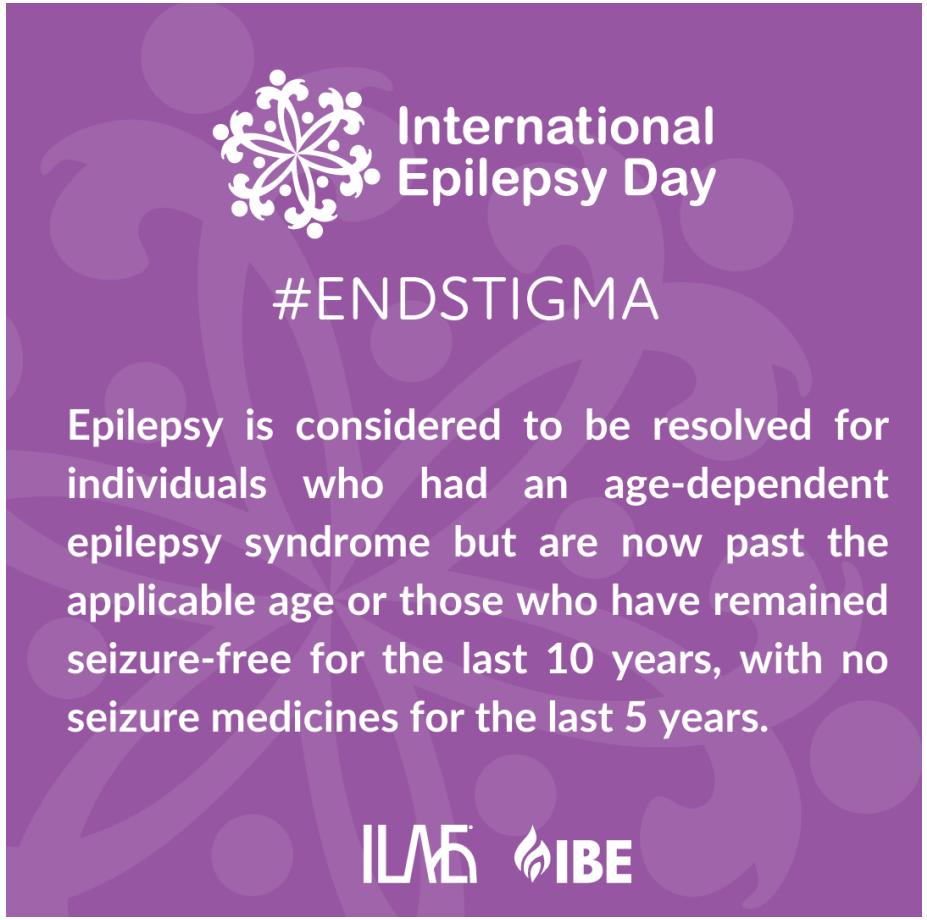








Is epilepsy Resolved?




SAY NO TO STIGMA
International
Epilepsy Day

Thank you

