

## PHARMACY

### Anti-Epileptic Drugs (AEDs)



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- Epilepsy is a condition in which a person has recurrent seizures. A seizure arises from the abnormal electrical discharge of the brain's nerve cells.
- Epilepsy can be treated with anti-epileptic drugs (AEDs). These drugs do not cure epilepsy, but they prevent recurrent seizures. Hence, compliance to the prescribed dosage of the medication is necessary for effective control of seizures. AEDs differ in their mode of action, hence may be used to control different types of seizures.
- Some examples of AEDs include Carbamazepine, Clobazam, Clonazepam, Lamotrigine, Levetiracetam, Phenobarbitone, Topiramate, Perampanel, Phenytoin, Primidone and Sodium valproate.

#### How are AEDs Administered / Taken?

- If you are taking slow-release or controlled-release formulations (e.g. Epilim Chrono, Tegretol CR), do not crush the tablet. If you are taking suspension or syrup, shake the bottle to mix well before use, to ensure that the measured dose is accurate.
- For Phenytoin suspension, as small changes in the dose can have a big change in drug effect, it is important to measure out the required dose of phenytoin liquid as accurately as possible using a syringe.
- If you miss a dose, take the missed dose as soon as you remember. If it is almost time for your next dose, take only the usual dose. Never take a double dosage to make up for the missed dose.

#### Can AEDs be Administered / Taken with Other Medications?

- It is important that you inform the doctor, pharmacist or nurse about other medications – including over-the-counter medications, supplements and traditional/herbal remedies – that you are currently taking, as they may affect the way you benefit from your epilepsy medications.

#### Can AEDs Be Administered / Taken with Food?

- Take phenytoin two hours apart from a high-protein meal (milk, meat), otherwise its efficacy may be reduced.

## What are the Important Side Effects of AEDs?

- Medications prescribed by your doctor are beneficial for your condition although they may result in some side effects.
- More common side effects are drowsiness, dizziness and nausea. Most people develop tolerance to these side effects after some time. When dizziness or drowsiness is experienced, do not drive, operate machinery or consume alcohol.
- Seek medical attention if you experience the following more serious or persistent side effects, as your doctor may need to adjust your medication dose or change your medication accordingly:
  1. Signs of allergy: rashes, facial swelling, difficulty breathing
  2. Visual disturbances e.g. blurring, double vision
  3. Unsteadiness while walking/ changing positions; impaired coordination
  4. Excessive drowsiness
  5. Severe abdominal pain and/or vomiting
  6. New delayed occurrence of rashes, blistering and/ or ulceration of skin, lips or gums
  7. Persistent fever, sore throat, mouth ulcers, unexplained bruising
  8. Yellowing of skin, eye whites, pale/ dark tarry stools, tea-coloured urine

Side Effects	Types of AEDs (but not limited to)	Management
Drowsiness, light headedness, lethargy, dry mouth, nausea/ vomiting	Carbamazepine Phenytoin Sodium valproate Benzodiazepines (e.g. clonazepam, lorazepam, diazepam) Phenobarbitone Perampanel	Avoid stopping the medication abruptly.  Your body will get used to the initial nausea or tiredness.  Consult your doctor if excessive drowsiness or impaired reaction occurs.
Headache, irritability, difficulty sleeping	Levetiracetam Topiramate	

	Lamotrigine Phenobarbitone Perampanel	
Slowing of reaction	Benzodiazepines (e.g. clonazepam) Phenobarbitone	
Hyperactivity and aggressiveness (especially in children), mood disturbances such as low mood	Phenobarbitone Levetiracetam Perampanel	Do not abruptly stop the medication.  Please consult your doctor when mood/ behavioural abnormalities occur.
Fine tremors at smaller muscles e.g. fingers/ wrist	Sodium valproate	It may go away after some time. If persistent, please consult your doctor.
Back pain, speech problems (difficulty articulating/ unclear speech)	Perampanel	Please consult your doctor.
Allergic skin rash  *Your doctor may arrange a blood test for HLA-B*1502 before starting carbamazepine, as patients who test positive for this gene are at increased risk of developing a severe rash.	Carbamazepine Phenytoin Lamotrigine	Discontinue the medication at the first sign of rash and seek medical advice immediately.
Appetite changes leading to weight gain or loss	Sodium valproate Topiramate (mainly appetite loss) Perampanel	Take after meals if your appetite is affected.  Maintain a healthy lifestyle to prevent weight gain.

Increased body hair, acne	Phenytoin	-
Hair loss	Sodium valproate	-
Gum overgrowth/ swelling	Phenytoin	Maintain good oral hygiene and use a soft-bristled toothbrush
Vitamin D and folic acid malabsorption and deficiency, which may lead to weaker bones and affect blood production	Phenytoin Phenobarbitone Carbamazepine	Increase intake of food rich in calcium and vitamin D.  Take folic acid supplement if prescribed by your doctor
Kidney stone formation ( <i>uncommon</i> )	Topiramate	Drink more water to prevent kidney stone formation.  See a doctor if symptoms of pain during urination occur.
Menstrual cycle disorders	Sodium valproate	Please consult your doctor.

It is important that you take your medications regularly.

If you develop rashes, facial swelling or shortness of breath after taking the medication, you could be allergic to the medication. Please seek medical attention immediately.

### Do I Need Regular Blood Tests When Taking These Medications?

- Your doctor will arrange regular visits for medical check-ups. Blood tests may sometimes be required to monitor your liver function, components of the blood and drug levels.

### Are There Any Special Precautions That I Need to Take?

- It is important to inform your doctor, pharmacist or nurse if you have any drug allergies.
- You should not discontinue treatment without advice from your doctor as this may result in seizures.

### Are There Any Implications on My Family Planning?

- You should inform your doctor at the earliest opportunity if you are pregnant or plan to conceive, as some AEDs are associated with birth defects.
- Do also consult your doctor if you are planning to breastfeed.
- Certain AEDs may reduce the efficacy of oral contraceptives. To prevent any unplanned pregnancies, please check with your doctor if you require a second contraceptive method (e.g. condoms) in addition to oral contraceptives.

### How Do I Store AEDs?

- Store your medication in a cool, dry place away from heat, moisture and direct sunlight, in the original container if provided.

If you have any problem with your treatment, please contact your doctor, pharmacist or nurse clinician.

Please keep all medications out of reach of children.

