

## Comparison of AEDs

	<b>Carbamazepine (CBZ)</b>	<b>Oxcarbazepine (OXC)</b>	<b>Valproic Acid/Divalproex (VPA/DVA)</b>	<b>Gabapentin (GBP)</b>	<b>Topiramate (TPM)</b>
Doses	300-1600mg/day BID-TID dosing  *available in CR form	600-1200mg/day in divided doses	750-3000mg/day BID-TID dosing	900-3600mg/day TID dosing	50-400mg/day BID dosing
Meta-bolism	Liver & P-gp * induces own metabolism	Liver * DOES NOT induce own metabolism	Liver	Not metabolized, Eliminated by renal excretion	P-gp, ( 70% is eliminated unchanged in urine)
Drug levels	17-54 µmol/L ( <b>Cdn</b> ) 4-12 mcg/ml ( <b>USA</b> ) * Frith: 3wks after Rx started, Verani: initially 2 levels taken 4 wks apart & both agree with testing 5d after Δ dose or +/- other Rx , may need to check other Rx levels if CBZ added	Not required	350-800 µmol/L ( <b>Cdn</b> ) 50-115 mcg/ml ( <b>USA</b> ) *initially 2 levels to establish dosage, 3-5d after Rx started & 5d after Δ dose or +/- other Rx (Verani); Frith recommends only if toxicity or non-compliance suspected, & DeLeon q.6 months thereafter	Not required	Not required
W/U	<ol style="list-style-type: none"> <li>1. CBC, plats &amp; diff</li> <li>2. E-, BUN, sCr</li> <li>3. LFTs</li> <li>4. TSH</li> <li>5. ECG (&gt;45yrs)</li> <li>6. BMD</li> <li>7. r/o pregnancy</li> </ol>	<ol style="list-style-type: none"> <li>1. E-</li> <li>2. Cr</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>CBC, plats &amp; diff</b></li> <li>2. <b>LFTs</b></li> <li>3. <b>Lipid profile (total, HDL &amp; TG)</b></li> <li>4. ♀: <b>wt &amp; BMI &amp; r/o pregnancy</b></li> <li>5. <b>Consider serum testosterone in young ♀</b></li> <li>6. <b>BMD</b></li> <li>7. <b>Serum amylase &amp; lipase</b></li> </ol>	BUN & sCr	Baseline serum bicarbonate BUN & sCr
F/U	Repeat #1, 2, & 3 monthly X 3 months, then annually BMD if risk factors for osteopenia  <b>**Increased risk of SJS in certain Asian populations.</b>	Na+ levels when suspected hyponatremia.	Repeat #1 & 2 monthly X2, then 2-3X/yr (Verani); Repeat #1 & 2 monthly X6, then annually (Frith). Repeat #3 & 4 q.3 months X4, then annually. Test #5 if s/s of menstrual irregularities or hyperandrogenism; also test prolactin, LH & TSH, & for insulin resistance & HTN. Ammonia levels if lethargy & Δ LOC.	LH & TSH sCr if renal toxicity suspected	Periodic serum bicarbonate; sCr if renal toxicity suspected (risk of kidney stones)

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	<b>Lamotrigine (LTG)</b>	<i>Levetiracetam (LEV)</i>	<i>Zonisamide (ZNS) (*sulfa Rx)</i>	<i>Tiagabine (TGB)</i>		<i>Phenobarbital (PB)</i>	<i>Phenytoin (PHT)</i>
Doses	100-500mg/day BID dosing	1000-3000 mg/day BID dosing	100-600mg/day in single or BID dosing	32-56mg/day BID-QID dosing		15-180mg/day in single or divided doses	300-400mg/day in single or divided doses
Meta- bolism	Liver (NO effect on P450 Enzymes)	Not metabolized, Eliminated by renal excretion ( 66% eliminated unchanged in urine)	Liver	Liver		Liver	Liver
Drug levels	Not required	Not required	Not required	Not required		65-150 µmol/L ( <b>Cdn</b> ) 20-40 mcg/ml ( <b>USA</b> )	40-80 µmol/L ( <b>Cdn</b> ) 10-20 mcg/ml ( <b>USA</b> )
W/U	Skin exam CBC & diff, LFTs, E-, sCr, r/o pregnancy	CBC, plats & diff, sCr	CBC & diff, LFTs, sCr			CBC & diff, LFTs	CBC & diff, LFTs, folate?
F/U	CBC, LFTs annually <b>**monitor closely for SJS in first 2 months</b>	CBC & diff, sCr annually	CBC & diff, LFTs, sCr annually (risk of kidney stones)	none		CBC & diff, LFTs annually. BMD/Vit D	CBC & diff, LFTs, folate annually. BMD/Vit D

Virani, A., Bezchlibnyk-Butler, K., & Jeffries, J., *Clinical Handbook of Psychotropic Drugs*, (2012); Saskatoon City Hospital, *Rx Files Drug Comparison Charts*, (2008), Bhaumik, S. & Branford, D., *The Frith Prescribing Guidelines for Adults with Intellectual Disabilities*, (2008), DeLeon, J., *A Practitioner's Guide to Prescribing Antiepileptics and Mood Stabilizers for Adults with Intellectual Disabilities* (2012).

**\*Use alphabetic order to recall drug levels (in USA units: mcg/ml units):** CBZ (4-12), Dilantin (10-20), PB (20-40), VPA (50-115)