

## Lab Monitoring of Psychotropic Medications

	Mood Stabilizers			Clozapine	
	Lithium	Divalproex/Valproate/ Valproic Acid	Carbamazepine	Clozapine	ANC Monitoring
<b>Why Monitor</b>	<ul style="list-style-type: none"> <li>➔ Narrow therapeutic range</li> <li>➔ Toxicity or subtherapeutic levels occur with small changes in serum level</li> </ul>	<ul style="list-style-type: none"> <li>➔ Check that initial level is in range</li> <li>➔ If toxicity suspected</li> <li>➔ If subtherapeutic dose suspected</li> </ul>	<ul style="list-style-type: none"> <li>➔ If toxicity suspected</li> <li>➔ If subtherapeutic dose suspected</li> </ul>	<ul style="list-style-type: none"> <li>➔ Effectiveness of medication</li> </ul>	<ul style="list-style-type: none"> <li>➔ Increased risk of neutropenia</li> <li>➔ REMS no longer required, but lab schedule is the same</li> </ul>
<b>When to Draw Drug Levels**</b>	<ul style="list-style-type: none"> <li>➔ Initial level: 5-7 days after initiation or dose change (sooner if toxicity suspected)</li> <li>➔ Weekly until stable dose reached</li> <li>➔ then at minimum every 6 months or clinical status change*</li> </ul>	<ul style="list-style-type: none"> <li>➔ Initial level: 3-5 days after initiation to titrate to appropriate dose</li> <li>➔ Then, only when clinically indicated (drug interactions, suspected toxicity, etc)*</li> </ul>	<ul style="list-style-type: none"> <li>➔ Initial level: 5 days after initiation or dose change</li> <li>➔ (Sooner if toxicity suspected)</li> <li>➔ Then, only done to check for toxicity or non-compliance, as no established relationship between efficacy and serum levels</li> </ul>	<ul style="list-style-type: none"> <li>➔ There are no requirements or recommendations to draw clozapine levels at a regular cadence</li> <li>➔ It may be useful to take levels during titration or evaluating non-response, non-adherence, drug-drug or drug-smoking interactions, or side effect management</li> </ul>	<ul style="list-style-type: none"> <li>➔ ANC calculated through a CBC with differential lab draw</li> <li>➔ If ANC remains within normal limits, lab schedule is:               <ul style="list-style-type: none"> <li>» 0-6 months: Weekly ANC</li> <li>» 6-12 months: Biweekly ANC</li> <li>» After 12 months: Monthly ANC</li> </ul> </li> </ul>
<b>Normal Range**</b>	<ul style="list-style-type: none"> <li>➔ 0.6 - 1.2 mEq/L</li> <li>➔ Acute mania: 0.8 - 1.2 mEq/L</li> <li>➔ Maintenance: 0.6 - 1.0 mEq/L</li> </ul>	<ul style="list-style-type: none"> <li>➔ 50 - 125 µg/mL</li> <li>➔ Not well established but levels &gt; 125 µg/mL increase risk of adverse effects</li> </ul>	<ul style="list-style-type: none"> <li>➔ 4 - 12 µg/mL</li> <li>➔ Level does not correlate with efficacy</li> </ul>	<ul style="list-style-type: none"> <li>➔ Clozapine: efficacy normally found at levels &gt;350 ng/mL</li> </ul>	See table on next page for full monitoring recommendations
<b>Normal Dose Range</b>	<ul style="list-style-type: none"> <li>➔ 600 mg - 1.8 g per day in 1 to 3 divided doses depending on indication</li> </ul>	<ul style="list-style-type: none"> <li>➔ 1.5 - 2.5 g per day</li> <li>➔ Max recommended dose 60 mg/kg/day</li> </ul>	<ul style="list-style-type: none"> <li>➔ 600 mg - 1.2 g per day</li> <li>➔ Doses up to 1.8 g per day if necessary</li> </ul>	<ul style="list-style-type: none"> <li>➔ 300 - 600 mg per day</li> <li>➔ Max dose 900 mg per day</li> </ul>	

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Notes		Diet, sodium intake, and hydration can affect levels	Has wide therapeutic range- toxicity uncommon	Two levels should be drawn, 4 weeks apart	Neutropenia is not dose related and can occur at any time, though most likely in first 6-12 months of therapy	
S/Sx of Toxicity		Nausea, vomiting, confusion, and weakness	Extreme sedation	Dizziness, difficulty walking, sedation	Seizures, drowsiness, hypersalivation, tachycardia and gastrointestinal hypomotility	
Other Monitoring Parameters	CMP	Initiation, then annually	Initiation then annually	With drug levels	See Monitoring Protocols for Members on Antipsychotic Medications table	
	CBC w/ platelets	Initiation, then annually	Initiation then annually	With drug levels		
	TSH	Initiation, then annually		With drug levels		
	ECG	Baseline			Baseline	

*\*Levels should be monitored after a change in dose as well as anything that may impact levels and may be clinically indicated more frequently, especially in members who are unable to reliably report signs and symptoms of toxicity or other adverse effects.*

*\*\*Each medication requires specific time intervals to draw labs. Labs not drawn at correct time interval may lead to inaccurate results or false out of range levels.*

## References

- ➔ [APA Legacy Practice Guideline for the Treatment of Patients With Bipolar Disorder](#)
- ➔ [APA Treating Bipolar Disorder: A Quick Reference Guide](#)
- ➔ [APA Practice Guideline: Treatment of Patients with Schizophrenia](#)

## ANC Monitoring Guidelines

ANC (per $\mu$ L)	Monitoring Guidelines
1500+ (BEN patients: 1000+)	<ul style="list-style-type: none"> <li>➔ 0-6 months of treatment: monitor weekly</li> <li>➔ 6-12 months of treatment: monitor every two weeks</li> <li>➔ After 12 months of treatment: monitor monthly</li> </ul>
1000-1500 (BEN patients: 500-999)	<ul style="list-style-type: none"> <li>➔ Monitor ANC 3x/wk until it is at least 1500 (at least 1000 for BEN patients), then you can return to the prior monitoring schedule.</li> <li>➔ For BEN patients, check weekly for four weeks, then you can resume the prior monitoring.</li> </ul>
500-999	<ul style="list-style-type: none"> <li>➔ Stop treatment and check ANC daily until it is at least 1000, then check 3x/wk until it is at least 1500.</li> <li>➔ You can resume treatment when the ANC reaches at least</li> <li>➔ 1500. Check ANC weekly for four weeks once 1500 is reached, then you can resume the prior monitoring.</li> </ul>
<500 (All patients including BEN)	<ul style="list-style-type: none"> <li>➔ Severe neutropenia/agranulocytosis</li> <li>➔ Stop treatment and check ANC daily until it is at least 1000 (500 for BEN patients), then check 3x/wk until it is at least 1500 (1000 for BEN patients).</li> </ul>

## Reference

- ➔ [Clozapine: Monitoring With Skill](#)

## Blood Work Schedule When Taking Antipsychotic Medications

Blood work is important to keep members safe and to ensure the medications are helping. Health care teams should monitor test results and measurements regularly. The table below can help track how often the doctor should review each item.

## Monitoring Protocols for Members on Antipsychotic Medications†

	Baseline	4 Weeks	8 Weeks	12 Weeks	Quarterly	Annually	Every 5 Years
Personal/Family History	✓					✓	
Weight (BMI)	✓	✓	✓	✓	✓		
Waist Circumference	✓	✓				✓	
Blood Pressure	✓	✓		✓		✓	
Blood Sugar (HbA1c)	✓	✓		✓		✓	
Cholesterol	✓	✓		✓			✓

†More frequent assessments may be warranted based on clinical status.

## Drug Resources

➔ [PA Medical Assistance Preferred Drug List](#)

➔ [MedlinePlus](#)

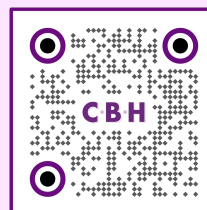
➔ [Medscape](#)

➔ [Drugs.com](#)



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