

# Maintenance Tips for the Brain-Based Treatment

*From our experience, tweaking medications is what makes the brain-based treatment a success.*

*These guidelines are what we've collectively learned either from our prescriber or from our own research and observation.*

## Anticonvulsant Therapeutic Ranges/Dosing

- ❖ It is recommended to make every effort to maintain the same manufacturer for your anticonvulsant medication, to minimize the risk (although low) of issues with different composition of ingredients. Ask your prescriber to write "maintain manufacturer" on the script, and check-in with your pharmacy.
- ❖ Frequent blood tests should stop once your child has reached a point of stability. Maintenance checks are recommended when side effects or behavior changes occur to determine what dosing adjustments can safely be made. Weight changes and puberty can affect the blood levels.
- ❖ Blood draws should be in the morning, 12 hours after the previous evening dose. The morning dose is withheld until after the blood draw to achieve a trough level.

## Weight-Based Dosing Recommendations

### **Trileptal/ Oxcarbazepine**

35-50 mg/kg/day; 30-35 blood level

### **Vimpat/Lacosamide**

200-400 mg/day; 10-15 blood level

### **Lamictal/Carbamazepine**

6-10 mg/kg/day; 10-12 blood level

Stability may be present at lower than therapeutic levels. Please see ***Titration Guidelines*** for more information on increasing and adjusting brain-based medications.

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## **Medication tweaks fall into several categories:**

- ❖ Time of day medicine is given.
- ❖ Splitting doses from 2x/day to 3x/day.
- ❖ Increase or decrease the dosage of anticonvulsant (check blood levels).
- ❖ Children go through growth spurts.
- ❖ Over time, your child may need less medication, because as the new brain cells are forming, they take the appearance of the calm brain cells.

- ❖ **It can take several months to titrate while getting to therapeutic levels.** Most children need medication tweaks to allow the brain-based treatment to work effectively (while titrating up and once stable).
- ❖ Anticonvulsants can make one sensitive to the sun, so make sure to use sunblock generously.
- ❖ **Dehydration is common with the use of anticonvulsants** since it lowers sodium and electrolytes. Make sure your child drinks a lot of water and/or Gatorade throughout the day. The key is a salt and water balance.

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## **When your child's behavior changes on the protocol**

- ❖ Check blood levels of your anticonvulsant – (see table to the left and adjust up/down if needed)
  - ❖ Consider an Amantadine break (see below)
  - ❖ Timing of medications
- \*\*If your child misses a dose, don't double up later, as your child may get dizzy or feel sick.**

## Anticonvulsant

Check blood levels and adjust to ensure levels are back in range. If an adjustment is needed, it's best to make it in small doses. Often over time and with puberty, the dosing may need to be adjusted.

### Too Low:

Irritability, Rage

### Too High:

Irritability, Rage, Dizziness, Increased consistent headaches, Blurred vision, Tremors, Sleepiness, Suicidal thoughts

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## Headaches

- ❖ **Try adding Gatorade, milk, or hydration water with electrolytes at least once/day.** Anticonvulsants decrease sodium and electrolytes, so it's important to stay hydrated to avoid headaches.
- ❖ Magnesium helps prevent headaches and helps with sleep, so best to give before bedtime.
- ❖ To help with headaches, place a cool pack on the head or cold eye mask over the eyes, and a heat pack on the feet.
- ❖ Over-the-counter medication to help with headaches is recommended.

Try changing to 3 doses per day or lower medication if the above methods don't work.

## Amantadine

A sudden change in behavior likely means a 48-hour break is needed. See **Titration Guidelines** for details. Check anticonvulsant blood levels first to ensure in range, prior to making a change.

Maximum dose is typically 400 mg daily.

Amantadine should be given no later than 4:00 p.m. For purposes of treating the frontal lobe, this is a daytime only medication. Due to its short half-life, it wears off fast, so if given in the evening, the child sleeps it off, essentially wasting the dose. It can also cause difficulty sleeping if given late.

### Too Low:

Impulse issues, Lack of Motivation, Hygiene, or Focus

### Too High:

Sleep issues, Appetite Issues, Psychosis

May need to change dose timing to address side effects or metabolism issues.

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## How to Support Nausea/Loss of Appetite

- ❖ To help prevent nausea, eat before medication is taken.
- ❖ If nausea is present on a consistent or somewhat consistent basis, add **100 mg of niacinamide/ Vitamin B3** with each dose (NOT Niacin). More than 200 mg of B3 per day is discouraged, as too much can cause skin flushing.
- ❖ To increase hunger, add **Cyproheptadine**, an antihistamine, 4-16mg at bedtime.

## Amantadine Breaks

*(About 25% of patients need an Amantadine break since the beneficial effect of the medicine is lost between 4 - 8 weeks).* To determine if you need a break – answers should be Yes to the following questions:

- ❖ Have I reached therapeutic levels yet?
- ❖ Is the change in behavior significant or sudden?
- ❖ Have I checked the blood levels of the anticonvulsant and fixed any issues/made changes before considering a break?
- ❖ Breaks are usually timed at the same intervals, so make a note. For example, if your child needs an Amantadine break after 4 weeks, then they will normally need to break every 4 weeks. Planning breaks before behaviors set in is a good idea.
- ❖ Breaks are for 48 hours (4 dosages) – but some have occasionally found they need 72-hour breaks for the Amantadine re-set to work effectively.

**\*\***Some find that it takes up to three doses after the break for the behavior to return to optimal. If a break is needed, you should consider a low-key weekend at home. A classic sign that a break was needed is that behaviors go back to normal and significantly improve after the completion of the break.

### Sleep Issues

- ❖ **Add Calcium/Magnesium**, as this combination helps with the sleep cycle, and is more effective than magnesium alone.
- ❖ If you use **Clonidine** and your child wakes up in the middle of the night, consider adding an extended-release Clonidine (i.e., one regular and one extended-release) to keep them asleep.
- ❖ **Valerian Root** can be a very effective natural option.

**Melatonin** - add time-release melatonin.

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### Adding a Stimulant

- ❖ **Stimulants should be added ONLY once stable in most cases if they are needed.**
- ❖ Parents often find that kids do best when they are on the brain-based treatment several months before adding a stimulant, so they can first complete all necessary dosing adjustments.

If short-acting stimulants are too much, consider something like Concerta. Some parents find that long-acting stimulants work better. The short-acting ones may be too big of a punch to the system for some children, and the time-release can sometimes be better tolerated.

### Antidepressant/Anti-Anxiety

- ❖ Many kids on brain-based treatment take a small dose of an antidepressant.
- ❖ **Lexapro and Prozac** are the most common.
- ❖ Many kids cannot tolerate SSRI medications until their mood is stable. However, families sometimes find that a low dose of anti-anxiety medication can greatly improve stability, once brain-based medications are therapeutic. Anxiety can be a trigger for raging, so adding an anti-anxiety medication is sometimes the missing piece.
- ❖ It's important to note that when a child's blood levels are in range, the anxiety sometimes subsides.

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### Therapy

- ❖ Recommended DMDD therapy is DBT. With any therapy modality, it is important that the child connects with their therapist. ABA is often triggering for kids with DMDD.
- ❖ Most families have found that **therapy will not typically work until a child is stable**. It can of course still be helpful for the rest of the family as needed.

Some families find that therapy is best when kids are 10 years or older.

### Child Gets Sick While on the Brain-Based Treatment

- ❖ Metabolism may increase when sick. If you add an antibiotic, that may cause the metabolism to increase even more. So, if you notice behavior like irritability or anger kicking up during those times, it may be that the body is metabolizing the medication too quickly. Don't adjust the meds during this time. Often, when a child recovers from being sick, their levels go back to normal.

If your child vomits 45 minutes to an hour after the medication was given, it was already mostly absorbed into the bloodstream. Do NOT stop the medication, especially the anticonvulsants when sick, as this would affect blood levels.

## **Possible Complications Due to Generics**

The information below is provided to alert you to possible adverse events that can occur when treating with a generic version of medication and switched by the pharmacy to an alternate manufacturer.

There is a significant scientific literature addressing the drawbacks of switching from brand-name drugs to generic versions, as well as generic version to alternative generic versions of antiepileptic drugs (AEDs). The reason that AEDs are particularly problematic is that they are “narrow therapeutic range” drugs. That is to say that drug concentrations must be maintained within a narrow window to have both maximal effect while avoiding (or at least minimizing) the occurrence of adverse events. The cited references are a representative sample of the literature.

Per Krauss, et al, “Switches between generic AED products may cause greater changes in plasma concentrations than generic substitutions for brand-name products.” Two different generic products can, in theory, vary at the two extremes of the 80%-125% range, causing large fluctuations in serum concentrations. These changes can easily lead to either breakthrough episodes of explosive emotional dyscontrol, or significant adverse events. Therefore, changes in clinical presentation without changes in dosage should raise the question as to whether an alternate version has been substituted.

There are dozens of pharmaceutical manufacturers world-wide that are producing oxcarbazepine generics, so more generics are likely to be approved by the FDA. If a deterioration in control or neurological adverse events occur, a trough blood level (first thing in the morning, prior to taking the anticonvulsant) should be drawn as soon as possible to determine if it is in the 25-35 microgram per milliliter range, (international therapeutic range for oxcarbazepine being 15-35 mcg/ml) which has been found to be maximally effective with no significant adverse events in this patient group. If the blood level is outside of this range, then the dosage of the new generic formulation should be adjusted up or down to return the blood level to the previously tolerated range.

## **REFERENCES**

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