**Binders for detoxification**

Detoxification involves multiple pathways, including liver/gall bladder, kidneys, lymph, skin/sweat, and breathing. The liver and gall bladder process and push out fat-soluble toxins into the intestinal tract in the bile. Then the bile gets reabsorbed, after detaching from the toxins. In many cases, bile reabsorption drags the toxins back in by mistake. Also, if you have a leaky gut, toxins can get reabsorbed thru that leaky gut lining. Binders like chlorella, charcoal, clay, and the others, help with elimination of toxins and waste products by binding them in the gut and keeping them there so you can flush them.

Most detoxification happens at night: The brain shrinks by 60-70% and moves lymph out of the skull down toward the belly. The gall bladder is active between 11 PM and 1 AM, and the liver is active between 1 AM and 3 AM. Taking a binder about 2 hours before bed maximizes its binding impact on overnight liver and gall bladder elimination. You can mix them up for broader effect.

Some binders help remove only the toxins and waste, and leave your minerals (magnesium, calcium, zinc, etc) alone - like Chlorella or citrus pectin. These can be taken forever. Others, like charcoal, clay and zeolite, will bind minerals as well as toxins, so these are best used for short periods of time – days, weeks, 2-3 months max. I limit charcoal to 2-3 days, zeolite and clay to 6 weeks.

I recommend a trace mineral supplement while on binders; I like Matrix Minerals by BioPure. This contains humic and fulvic acids, which help draw out glyphosate. It’s best to test your minerals to tailor your supplementation.

**Timing: BEST AT BEDTIME. OR 90 min before meals/supplements/meds OR 2 hours after meals/supplements/meds, unless otherwise noted.**

* + Chlorella pyrenoidosa 250 mg/BioPure US. Dose 12-16 tabs 1-4 times/day, 60-90 min before meals and/or at bedtime. Can dissolve in spring water, or chew, or swallow. Can increase up to 30 tabs or more/dose for Herx reactions. Harder than the other chlorella to digest, has stronger affinity for heavy metals.
  + Chlorella vulgaris 250 mg/BioPure US. Dose 8-12 tabs 2-4 times/day. Can increase up to 30 tabs for Herx reactions. May be better than Chlorella pyrenoidosa if you have constipation or a sensitive stomach.
  + BioToxin Binder by Cellcore. 2 caps 1-2x/day.
  + Modified citrus pectin (PectaClear, PectaSol) 1-2 caps twice/day. Good for lead, other metals.
  + PC Ecklonia cava/BioPureUS. Dose 2-3 caps two-three times per day. Contains all 72 trace minerals, and polyphenols.
  + Zeobind/BioPure US: high silica zeolite (clinoptilolite), strong affinity for aluminum and mycotoxins. ½ teaspoon 2-3 times per day, in between meals and/or bedtime.
  + Activated charcoal/Nature’s Way, or Bulletproof Bamboo Charcoal. 1 gram 2 hours before bedtime. Widely available, cheap. Best for acute detox reactions or acute GI symptoms for a few days, but I don’t recommend using this for more than 2 or 3 days.
  + CytoDetox. Clinoptilolite fragments in liposomal form. Good cellular penetration, crosses blood brain barrier. Take 0.5 - 1 mL orally (½ - 1 dropper), 2 to 3 times a daily. Cytodetox.com to order. **Never** start with this one, though.
  + Bentonite Clay. MediClay FX by Premier Research Labs. 2 caps 2-3 times per day. To order: https://prlabs.com/customer/account/create/code/beb567/

**Some combination or specialty products I like:**

* + TOX-EASE BIND/Beyond Balance (flax, shilajit, charcoal, beta sitosterol) 1-2 caps twice/day away from food/supplements
  + TOX-EASE MET/Beyond Balance for heavy metal detox. 1-2 caps 1-2 times per day. Can alternate with TOX-EASE BIND every other day
  + MetalSweep/BioPure US: silica and vitamin C from acerola. Dose 500mg (1 scooop). Silica binds aluminum.
  + BioSil liquid or caps. Silica, binds aluminum. 5-10 drops/day.
  + MycoPul/Reseached Nutritionals: 1 cap twice/day (contains humic/fulvic powder, activated charcoal, Zeolite (clinoptilite), microchitosan, silica
  + HM-ET Binder/CellCore: humic, fulvic, zeolite (designed for heavy metals and environmental toxins). 1 cap twice a day.
  + Carboxy/CellCore: some really like this for mold; activated carbon technology
  + ViRadChem Binder/CellCore: activated carbon, acai, arthchoke leaf, broccoli leaf, wheatgrass

To order from **Beyond Balance**, use my account POW1775 when you call. You may call at 1-800-332-7713 or order online at [www.beyondbalanceinc.com](http://www.beyondbalanceinc.com). You must use my account when ordering as they only sell thru physicians.

To order from **BioPure**: [www.biopureus.com](http://www.biopureus.com) or call 800-801-6187

To order CytoDetox: <https://cytodetox.com/>

To order from **Researched Nutritionals**: call 1-800-755-3402with orders.  If you call, you must inform them that you are a patient of mine and provide the Physician code POWMD.   If you order online, you will need to enter my Physician Code POWMD when creating your online account. [www.ResearchedNutritionals.com](http://www.ResearchedNutritionals.com)

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