



## Dosing with Chlorella/Cilantro for Neurotoxin Elimination

Removing neurotoxins from your bowel is critical for successful treatment of heavy metal, toxic chemical, chronic infection detoxification as well as endogenous toxins that are produced by the “bad” bugs in the bowel and exogenous toxins that we eat. Toxicity, specifically neurotoxicity, is one of the root causes of all chronic diseases. The importance of binding neurotoxins and removing them in the feces is outlined in the end “Understanding Neurotoxins...”

Chlorella is our food of choice for detoxing the bowel and body, because it is not only a great chelator but a very important food supplying many vital nutrients required to detox and change your internal body chemistry (or internal milieu) to a healthier environment. Other alternatives to bowel detox of neurotoxins are apple pectin, Zeolite, chitosan, charcoal, clay and cholestyramin.

Chlorella is both a chelator – moving heavy metals out of the body and a mobilizer, moving mercury and other heavy metals from deeper stores to more readily removal areas. We use in it both capacities.

- There are three strategies to dosing chlorella:
  - i. Low dose: .25 – 1 gram with meals: this dose will bind mercury and other heavy metals in the food that you eat (i.e. mercury in fish).
  - ii. Mobilizing dose: 3-9 grams per day; the dose could be taken all at once or divided with meals, at night. (See below).
  - iii. Chelating dose: 2-3 times the mobilizing dose - to be used during chelation days.
- There are two strategies concerning when and how much chlorella to dose
  - i. Take the **entire mobilizing dose at one time once or twice a day 1 hour away from food**. This is the best strategy for **gut detox** because it concentrates the chlorella in the gut, scrubbing the heavy metals from the biofilm, gut lining and the pathogens. This strategy is often used earlier in the detox treatment, when bowel functional restoration is important.
  - ii. Once the gut and extra cellular connective tissues have been detoxed for at least 1 month (for some longer), chlorella and cilantro are used for the most effective detox combination. The strategy is to take chlorella 30-60 minutes before meals and/ or at night before bed followed by cilantro. This strategy will be most effective in removing neurotoxins that are detoxed in the liver and delivered to the bowel from the bile.

Chlorella is very complimentary with other detox agents and support agents, which can be used for more efficient and effective detox.

- Processed (nanonizing chlorella products):Matrix Metals, NDF, Metal Free

- Vitamin C and antioxidants, Ecklonia Cava; Minerals and electrolytes
- Sulfur products: MSM, DL Methionine, taurine, garlic, NAC
- Zeolites: Alli-thiamin
- Phospho lipids with Ca EDTA ...
- OSR
- Chelating agents: DMPS, DMSA, Na EDTA, D-Penicillamine, glutathione

### **The following is instructions to follow when dosing chlorella**

Your Maintenance dose of chlorella is: \_\_\_\_\_g/ day.

Summary:

Chlorella dose:

1. 45-60 min. prior to cilantro dose;
2. with the meals
3. or at bed for brain detox.

All Vitamin C supplements at end of meal, or another meal

Note: If fish oils are taken, you may want to take with chlorella.

**Mobilizing phase: 10-14 days** prior to your scheduled chelation appointment, start your maintenance dose of Chlorella.

- The most important strategy is to take the Chlorella, how and when is secondary. Make life as simple as possible
- It is best for some to start slow with chlorella ½ -1 gram at first and add ½ to 1 gram per day until you have obtained your recommended mobilizing dose.
- **In the early phases of detox**, it is best to take your dose away from food by at least one hour and entire dose can be taken at one time. This will detox the GI better than if chlorella is eaten with meals
- If you have GI disturbance with chlorella, divide your dose and take with meals. Although this will provide less bowel detox action, but it may be easier on the stomach.
- When **mobilizing mercury with chlorella and cilantro**, it is best to take your dose (divided) chlorella dose 45-60 min. prior to your meal; then your cilantro with the meal. If fish oils are taken, it is best to take the fish oils with the chlorella. Vitamin C will inactivate the action of chlorella and cilantro, therefore do not supplement Vitamin C at that meal or take as far away from the chlorella or cilantro doses. That is why we recommend taking Vitamin C at the end of the meal or best at another meal. .
- Fish oils may contain mercury. Therefore it is advisable to dose your chlorella with the fish oils (to bind the mercury). Fish oils are an important strategy to rehabilitate the membranes, which are always a problem in all chronic health issues.
- Chewing the chlorella is the best because saliva will tag the chlorella naturally (with monoclonal antibodies) and delivered to the most receptive areas.

- If you have continued problems with chlorella, try adding cellulose (an enzyme able to be purchased- health food store). If still a problem, switch to Porpha-zyme, or one of the clatherating agents (NDF, PCA, Metal Free)
- The gut is the major route for heavy metal detoxification, therefore the gut must be functioning well with (hopefully multiple bowel movements per day). If not, re-absorption of the mercury is likely to occur.

**Chelating phase:** The day prior to your chelation appointment **double or triple the dose**, and continue the doubled dose the day of the chelation and the day after.

- This is a chelation dose of chlorella is **designed to move the mercury out (through the bowel)**.
  - This dosing can be used as a **naturopathic chelation by itself**, or in conjunction with other chelation methods (i.e. DMPS, DMSA, EDTA, D-Penicillimine), which has been shown to greatly enhance the yield.
  - The day after the chelation we usually schedule a vitamin and mineral IV with glutathione, which is also a chelator with a slightly different action. The chelation dose of chlorella is extended to cover the day of this therapy.
  - The detox spa can greatly enhance the detox of neurotoxins - mercury and other heavy metals, toxic chemicals chronic infection neurotoxins.... It is best to do detox spa procedures the day after the IV chelation. The procedures to consider are:
    1. Lymphatic treatment – KLM (micro-current), massage, Chi machine
    2. Skin detox: Infra- red sauna or ozone steam; Mercury vapor lamp
    3. Bowel: colonics
    4. Detox foot baths: Toxaway, Aqua Chi, BEFE; stimulates the kidney and liver meridian at the feet to effectively increase toxin elimination activity of both organs. There is also direct active lymphatic excretion of toxins across the soles of the feet. This devise is always used during the chelation day.
2. **Post-chelation phase:** For 3-5 days after the finish of the chelating dose take the mobilizing dose in divided dosages with meals.
- To bind the mercury from its release in the liver
  - This is the time to do gall bladder flushes and to take additional GI binders
3. **Stabilization phase:** Don't take the maintenance dose until the start of the next cycle.
- If eating fish or other mercury contaminated products, take ½ -1 grams of chlorella with meal to bind the mercury.

### **Understanding the elimination of neurotoxins using chlorella/ cilantro**

Chlorella is a very important food for detoxifying all neurotoxins from the bowel. Chlorella is the only intelligent chelator, very effectively removes neurotoxins but also a whole and complete natural food supplying a rich source of amino acids, essential fatty acids, B-12 and vitamins and minerals. Some consider Chlorella to be one of the best natural foods available, it is by far the largest health food eaten by more people world-wide.

Neurotoxins include: (i) toxic heavy metals (mercury, lead cadmium, aluminum...); (ii) toxic chemicals (phthalates and other plasticizers; benzene, styrene, formaldehyde, dioxin, insecticides, solvents, PCB's...) (iii) biotoxins from chronic infections (lyme, botulinum, parasites, chlamydia, TB, fungus, candida, virus to name a few), and (iv) other endogenous and exogenous neurotoxins (foods, preservatives, cosmetics, bad gut bugs).

Neurotoxins are not excreted easily; Neurotoxins are naturally excreted from the bowel via the liver and bile. Unfortunately neurotoxins are naturally and mostly re-absorbed in the bowel by its vast nervous complex (enteric nervous system) and then redistributed into first the liver then to the brain, peripheral nerves, cellular membranes fat or other bodily compartments.

To effectively remove the neurotoxin, they need to be effectively bound in the upper part of the small intestine, when the bile is secreted during digestion. Chlorella eaten with food or dosing chlorella 1 hour prior to a cilantro dose will bind the neurotoxin in the bile with the chlorella and carry it out in the feces. Cilantro causes the liver to release the bile. Cilantro is also an important source of organic selenium, a very important mineral in heavy metal detox.

The action of cilantro is quick (about 20 min). Cilantro mobilizes mercury and other neurotoxins from the cell membranes but does not chelate (or pull them out well). Therefore an important detox strategy is to have chlorella on board at the time of mobilization (taking cilantro) to more effectively chelate the metals out.

### **Chlorella is a major nutrient in Heavy Metal Detoxification**

#### **A. General comments:**

- ◆ Chlorella is the most studied nutrient (2000 peer reviewed articles mostly Asian)
- ◆ Can be used **prior to Hg filling removal** [1-2 weeks] and is part of the pre-dental protocol. It won't remove Hg from fillings (like other chelating agents), so it can be used safely with Hg fillings in the mouth (pre-dental protocol).
- ◆ Binds **heavy metals in the gut**, and from the blood circulating through the bowel wall. The chelating agents or HM binding peptides appear to pass through the bowel and enter the blood stream and extra cellular spaces. It does not cross the brain barrier.
- ◆ Chlorella binds **strongly to all Heavy Metals** and therefore can become contaminated with HM easily; some sources appear to be contaminated; quality is important.
- ◆ Can be used as a **mobilizing agent or chelating agent depending upon the dosage.**
- ◆ Chlorella is an **excellent food for detox**, complete source of amino acids, B12, essential fatty acids and good mineral source; green foods are very good for gut health and alkalizing the body; it has anti bacterial and viral properties, and enhances growth hormone.
- ◆ There are two species of chlorella that are important for detox:
  - ◆ *C. pyrenoidosa* is better for the absorption of toxins, but harder to digest,

- ◆ *C. vulgaris* has a higher amount of chlorella growth factor content, is easier to digest but less metal binding capability

**Detox properties of Chlorella (most in peer review)**

- Anti-viral – CMV and other herpes V
- Toxin binding (muco-polysaccharide membrane) – toxic metals, environmental toxins (use for Toxic Chemical detox concurrently)
- Repairs and activates the body’s detoxification functions:
  - Dramatically increases reduced glutathione
  - Various peptides restore coeruloplasmin and metallothionein
- Sporopollenin effective in binding neurotoxins (as effective as cholestyramin) and more effective in binding toxic metals than any other natural substance
- Lipids (12.4%) of alpha and gamma linoleic acid – for membrane and peroxisomes rehabilitation.
- Methyl-cobalamin – important in any nervous system detox and restoration
- Chlorella growth factor – detox but not well understood (specific peptides for every toxic mental)
- Porphyrins in chlorophyll have strong metal binding effect; Chlorophyll activates the PPAR receptor on the nucleus of the cell, which is responsible for peroxisome coding (turn on the gene), opening the cell wall (important for all detox procedures), normalizing insulin resistance and more. Note that medical drugs that activate the PPAR receptor (pioglitazone) effective in treatment of breast and prostate cancer.
- Super nutrient: 50-60% amino acid (good for vegetarians), methyl-cobalamine, minerals, vitamins, chlorophyll
- Immune system tonic
- Restores bowel flora by reducing the heavy metal binding on the pathogenic bacteria and fungus, thereby reducing their competitive advantage with the beneficial bacteria
- Digestive aid
- “Alkalinizing agent” Klinghardt

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