

# HOW PLANT-BASED DETOXIFIERS BENEFIT CHEMICAL DETOXIFIERS

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**U**tilizing the balance of science, nature, and western medicine is one of the gifts of the modern era. It is the authors belief that all methods of healing be integrated and employed to address the needs of the individual and achieve the balance and vitality of a healthy body.

This paper serves to examine four heavy metal detoxifiers; DMSA and DMPS, inorganic or man-made detoxifiers and NDF and NDF Plus, organic or all natural detoxifying agents. We will discuss their properties, benefits and limitations and how combining natural methods with western medicine provides a safety net while significantly increasing positive results.

A state of “man-made versus nature” exists in the world today. Humans manufacture and ingest many substances that cannot be naturally broken down by the human body. These substances exist in our air, water, food, even our teeth<sup>1</sup> and include environmental pollutants<sup>2</sup> such as heavy metals, chemicals, pesticides, and plastics. Research shows these pollutants contribute to many health issues in adults and children.<sup>3,4,5,6,7</sup>

Environmental risk factors play a role in more than 80% of the diseases regularly reported by the World Health Organization.<sup>8</sup> In children alone, the costs of environment related disease is estimated at \$76.6 billion.<sup>9</sup> In adults it is the underlying causal factor in debilitating and costly degenerative diseases. World conditions for men, women, and children make it a priority to address daily and certainly biannual detoxification protocols.

## Understanding Inorganic; man-made substances and Organic; natural substances

Webster dictionary describes the word inorganic as:

*Devoid of an organized structure or the structure of a living being; unorganized; as rocks, minerals and all non-living chemical compounds and elements are inorganic.*

The word organic is described by Webster as pertaining to an organ or its functions; consisting of organs or containing them; as the organic structure of the human body or of plants.

In the case of man-made or inorganic supplements, these interventions tend to over stimulate and place a burden on different systems in the body. They can also drain nutrients. However, there are times when synthetic supplements are beneficial and necessary. Herbal and food based formulas coming from Mother Nature are organic, provide a synergistic supportive effect when used with inorganic supplements while having a balancing impact on the body.

## How do we safely and effectively remove these environmental toxins from the body?

### Sulfur Based Heavy Metal Detoxifiers

DMSA<sup>10</sup> (Meso-2,3-dimercaptosuccinic acid) and DMPS<sup>11</sup> (2,3-dimercapto-1-propanesulfonic acid sodium) are man-made, inorganic, sulfur based di-thiol (two sulfur atoms) heavy metal detoxifiers that mobilize heavy metals. Research shows DMSA and DMPS remove heavy metals from the body including the organs, brain, and connective tissue<sup>12,13</sup> by pulling metals from their binding sites.

We must take into consideration the terrain damage that results when these substances are used on their own. Due to the sulfur content, inflammation and dysbiosis in the gut is a common side effect. Studies indicate DMSA and DMPS impair immune function, increase hepatic enzymes and creatinine levels as well as deplete essential nutrients including selenium, zinc, magnesium, manganese, molybdenum.<sup>14,15,16</sup> And since supplementation is needed over an extensive period of time to detoxify toxic heavy metals, using sulfur based chelators alone is inefficient and contraindicated to restoring healthy balance in the body.

Monitoring liver function (SGOT, SGPT, GGT, ALT, AST), kidney function (BUN, creatinine) and Complete Blood Count (CBC) is recommended.

Both are volatile and strong-smelling resulting in a sulfur odor often compared to onions, garlic, and skunk musk. DMPS and DMSA are not recommended when silver amalgam fillings are in the teeth.<sup>17,18</sup>

DMPS requires a prescription and is available in the following forms; pill, transdermal, suppository or intravenous. DMSA is available by prescription or online and is available in pill, suppository or transdermal form. The half life of DMPS and DMSA is approximately 6-8 hours and 4 hours, respectively.<sup>19,20</sup>

### **NDF and NDF Plus: Mother Nature's Detoxifiers**

NDF (Natural Detox Factors) and NDF Plus (Natural Detox Factors Plus) are all natural detoxifying dietary supplements. The benefits of these two are an increase in the excretion of and binding to toxic heavy metals, chemicals, and pesticides. The chlorella<sup>21,22,23</sup> cell wall in NDF and NDF Plus™ is a mucopolysaccharide ion exchange resin (M.I.E.R) that forms both ionic and double bonds with toxic heavy metals, chemicals, and pesticides and escorts them out of the body. NDF and NDF Plus also contain cilantro,<sup>24,25,26</sup> beneficial lysates of 13 beneficial probiotics, 19 amino acids—including the 8 essential amino acids, multiple vitamins and minerals, chlorella growth factor, and live enzymes. Neither NDF nor NDF Plus remove beneficial minerals or create imbalances; they are adaptogens<sup>27</sup> that restore the natural homeostasis in the body and bring essential elements into more “normal” ranges.

NDF is recommended for those with normal to strong constitutions. NDF Plus is recommended for those with high stress, compromised immune function, or assimilation issues. Both products are safe to ingest when silver amalgam fillings are in the teeth.

NDF and NDF Plus are available without a prescription. As liquid dietary supplements, they can be diluted in water or juice, given sublingually, rectally, or using a transdermal application. The half life of NDF and NDF Plus is 2 hours.

### **DMSA, DMPS, NDF and NDF Plus: Their Impact on the Body's Terrain According to Bio Electric Medicine (BEV) per Professor Vincent**

The human body is constantly absorbing and giving out radiant energy, exchanging ions for other ions to form different substances, molecules, or compound bodies. These are called chemical changes, caused by their different chemical affinities and are electrical in nature. Ions are nascent particles carrying electric charges, either positive

or negative, which are split from molecules of matter in solution when dissociation takes place. They are in rapid motion and are always seeking to establish equilibrium.<sup>28</sup>

The work of Professor Louis-Claude Vincent assessed the life energy balance and the internal environment and found a method to measure these ions. He termed this “the body electric”, measuring the building blocks of life: the elements of amino acids, enzymes, ions, and atoms found in the bodily fluids of blood, urine and saliva. He found monitoring the values of pH (acidity or alkalinity), oxidation-reduction (electron) potential, and resistivity (the molecular ion movement) of the body fluids (blood, urine and saliva) provided unique information of a particular patient's susceptibility to illness.<sup>29</sup> This internal environment is like the terrain of the soil in which a farmer grows crops. If the soil is too acid or too alkaline, has too much or too little oxygen or nitrogen, or has an imbalance of other nutrients, the crops will either not grow, or will become weakened and more susceptible to microbes and other forms of disease.

According to the BEV grid which Professor Vincent innovated, DMSA and DMPS fall into quadrant 3 which produces a rigid, cationic, positive, oxidized, acidic state in the body. NDF and NDF Plus fall into quadrant 1, which has a flexible, anionic, negative and positive alkalinizing effect; the opposite and needed antidote to pull a patient to balanced health when using sulfur (sulfonate) type compounds or substances. Heavy metal toxicity produces the same bio-electrical response in the body as DMSA and DMPS: a rigid cationic, positive, oxidized, and acidic state.<sup>30</sup> Therefore, these chemical based methods of detoxifying are directly contraindicated for a metal toxic person who triangulates in to Quadrant 3, which is a high percentage of people on the planet.

As most individuals are already acidic and rigid, giving a substance like DMSA and DMPS contributes to further imbalances in the body's terrain and often results in a detox reaction.

### **Understanding a “Detox Reaction”**

A detox reaction indicates toxins are being removed from the body faster than the main organs of elimination (bowels, liver, kidneys) can comfortably excrete. This often represents congestion in a bodily system. The excess is removed through the lungs and/or skin resulting in symptoms such as a runny nose, headache, sore throat, cough, skin irritation, sweating, or an exacerbation of existing symptoms. It is not necessary to experience a detox reaction during detoxification. In fact, this indicates the remedy, dose, or frequency of dose needs to be adjusted and/or additional organ support is needed.

Detoxing too quickly in an imbalanced body triggers the release of cortisol from the adrenal glands.<sup>31,32</sup> High cortisol levels inhibit the immune response, lead to unstable blood sugars, high histamine, and an imbalance in electrolytes like sodium and potassium. Cortisol must also be broken down and filtered by the liver for the body to eliminate. This slows down the healing process.

An effective way to see if toxins, such as heavy metals, chemicals, lactic acid, and others are leaving the body is by measuring first morning urine pH. If upon awakening, urine pH is in the healthy range of 5.5–6.2, we know acidic toxic waste is leaving the body. If the first morning urine pH range is higher than 6.2, this can indicate the body is unable to detoxify efficiently and support the main organs of elimination (bowels, liver, kidneys) is recommended.<sup>33</sup>

### Balancing Western Chelation affects with Natural Detoxification Methods

NDF and NDF Plus mitigate many of the side effects associated with DMPS and DMSA due to their bioelectrical balancing of the terrain. NDF and NDF Plus have an anionic impact offsetting the cationic affect of both the chemical chelators and the heavy metals. When the terrain is balanced then it's difficult for health issues to manifest and if health issues are present, is easier for them to disappear. This is where an individual will have a state of well-being and experience progress.

Using a proprietary manufacturing process, the active ingredients in NDF and NDF Plus are suspended in liquid, assuring rapid absorption and 100% bioavailability. They are natural detoxifiers and are considered adaptogenic biological response modifiers, supporting the immune system.<sup>34</sup> Di-thiol chelators are drugs and are a

man-made engineered approach which makes excretion of heavy metals easier to measure but also stresses the body or creates an imbalanced terrain.

Di-thiol chelators go straight for the heavy metals and dislodge them; however they are not efficient at binding to them. One study reports, “We show that neither DMSA nor DMPS forms a true chelate complex with mercuric ions and that these drugs should be considered suboptimal for their clinical task of binding mercuric ions.”<sup>35</sup> When these chelators are given in combination with NDF or NDF Plus, an increase in the elimination will occur due to the M.I.E.R. binding capabilities.

### A Case Study

Male, 10 year old presents as a “non-excretor” of heavy metals. He is treated with an IV DMPS “challenge” to promote excretion of heavy metals, his results show less than impressive results in column two below. His next IV DMPS challenge includes ingesting 7 drops of NDF Plus 2x a day along with 8 drops of Liver Life 2x a day in water. This increases his excretion of heavy metals dramatically over his baseline IV DMPS. Patient begins to remove mercury and other toxic heavy metals with the addition of a M.I.E.R. detoxifier and liver and kidney drainage support.

### A Practical Approach to Avoid Detox Reactions and Redistribution of Toxins

If the liver or kidneys are congested, the bowels are not moving efficiently and/or the dose of a detoxifier is too high, more metals will be mobilized than the organs can comfortably excrete. This increases the chance of experiencing a detox reaction and contributes to redistribution.

Here are steps to mitigate detox reactions, the redistribution of toxins and promote balance in the body:

Heavy Metals Tested	Result: IV DMPS	Result: IV DMPS w/NDF Plus & Liver Life	Percentage Increase	Ref Range
Aluminum	100	260	160%	60
Antimony	0.3	11	3566%	1.5
Arsenic	26	53	103%	130
Cadmium	0.5	0.8	60%	2
Lead	14	33	135%	5
Mercury	<dl	3.1	3,000%	5
Nickel	13	22	69%	15
Thallium	0.1	0.2	100%	1.1
Tin	4.8	11	129%	15
Uranium	0.1	0.2	100%	0.2

- Support the structure and function of the liver.
- Restore healthy first morning urine pH to 5.5–6.2 range.
- Insure hydration and increase liquids to flush toxins.
- Move the bowels at least twice a day.
- Balance chemical chelators with natural binding agents such as NDF or NDF Plus, activated charcoal, bentonite clay, modified citrus pectin.
- Use appropriate dose of detoxifiers for the patient. Begin with a low dose and titrate up as tolerated. Increase dosage as body's terrain comes into balance.
- Give constitutional support remedies.

### Guidelines for a DMSA/DMPS with NDF/NDF Plus Heavy Metal Challenge

Preparation for DMSA or DMPS with NDF Challenge

1. During the week prior to the baseline DMSA or DMPS\*\* challenge continuing through the completion of the DMSA/DMPS post challenge, enforce strict dietary and lifestyle guidelines that include: no seafood, no exposure to chlorinated water either bathing or in foods, no use of commercial hygiene products, nonorganic foods containing pesticides, hormones or genetic modification, no change in supplement protocol. \*\*Neither DMSA nor DMPS should be taken by pregnant or lactating women, or if amalgam fillings are present in teeth. Use this protocol under a licensed practitioner's supervision.
2. Start with the minimum dose of Liver Life and increase per intake instructions. Stay on Liver Life during the entire challenge process.
3. On day 6 begin taking 1 ml of NDF or NDF Plus twice a day per protocol for 3 days. If your practitioner recommends a different dose please use that one.
4. On Day 7 take man-made chelator of choice:

#### DMSA:

- Adults (generally good constitution) take a 300 mg bolus dose of DMSA on an empty stomach, after having voided the bladder. Collect urine for the next 6 hours.
- Sensitive Adults take an oral dose of 100 mg of DMSA every 6 hours 3 times per day. Collect urine on the 4th day for 6 hours.
- Children take an oral dose of 50 mg of DMSA, every 6 hours for 3 days and collect the urine 4th day for 6 hours.

#### DMPS:

- Adults take an oral bolus dose of 300 mg of DMPS on an empty stomach, after having voided the bladder. Collect all urine for the next 6 hours. Send to lab for Toxic Elements analysis.
  - If you opt for DMPS with your child, use your practitioners' recommendation.
5. Give activated charcoal 45 minutes to 1 hour following doses of DMSA or DMPS to mitigate possible detox reactions. An organic coffee enema can be utilized to relieve headache caused liver burden.
  6. Send urine sample in container provided to lab for Urine Toxic Elements analysis. If you would like to compare the effectiveness of adding a M.I.E.R. detoxifier to a man-made chelator, omit NDF/NDF Plus in Step 3 above. Complete a follow up challenge with both to compare the distinctions in lab results.
  7. Treat with a heavy metal and chemical detoxification protocol for 8–12 weeks. Follow up challenge with DMSA / DMPS with NDF can be utilized every 3-6 months to determine duration of detoxification protocol.
  6. Send urine sample in container provided to lab for urine Toxic Elements analysis. If you would like to compare the effectiveness of adding a M.I.E.R. detoxifier to a man-made chelator, omit NDF/NDF Plus in Step 2 above. Complete a follow up challenge with both, see the distinctions in lab results.
  7. Treat with a heavy metal and chemical detoxification protocol for 8–12 weeks. Follow up Challenge for DMSA / DMPS with NDF Challenge

### Stabilizing the Human Body

Today, stressors for human beings are abundant. It has become a daily necessity to remove toxins that contribute to the dysbiosis and destabilizing of one's body, mind and spirit. If substances are added to the body that cannot be completely metabolized by the cell intelligence, then balancing or mitigating their detrimental impact is necessary for the body's healing processes. This can be easily accomplished by including foods and herbs that Mother Nature provides. The achievement of balance, vitality, and health is at our fingertips. 🌿

## ABOUT THE AUTHORS



**Stephanie Ray** is president and co-founder of BioRay, the natural detox company. Stephanie created several Traditional Chinese & Biological medical clinics in California over a span of 14 years with Dr. Timothy Ray OMD. Stephanie has published several articles, protocol guides and supervises intervention studies on behalf of BioRay.



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