



### ■ Laboratory News

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## Laboratory News

### ■ Zinc Deficiency and Autism

Gadolinium is a hot topic right now. Does chelation work, and if so, which chelator or which chelation protocol works best? Our latest research paper on autism was just published in the *Journal of Clinical and Medical Research*. We compared the toxic metal burden of autistic and healthy patients living in the same environment (as we had done with our study on Nigerian children) and evaluated and compared their genetic detoxification ability in regards to the Glutathione-S-transferases GSTM1 and GSTT1.

#### **Summary:**

We did not locate a greater metal burden in our ASD group but could demonstrate that zinc deficiency as seen through blood testing is 3x more prevalent in the ASD group. Zinc deficiency reduces the function and activity of the SOD1 enzyme and inactivity of the SOD enzyme disturbs the cell metabolism. Since zinc is needed for proper functioning of the zinc-containing Phase I Enzyme SOD1 (CuZnSOD), which plays a role in the Metallothioneine gene expression of the detoxification system, we can safely assume that further genetic testing especially of the SOD1 enzyme is needed, in addition to blood metal testing, to evaluate the combined effect of toxic metal burden in the presence of zinc deficiency.

#### **Read or Download here:**

<https://maplespub.com/article/Comparing-the-Genetic-Detox-Ability-and-Heavy-Metal-Burden-in-a-Cohort-of-Samples-of-Egyptian-Children-and-those-with-Autistic-Spectrum-Disorder>

### ■ News about Overlooked Environmental Toxins

Source: British NPIS (Royal College of Emergency Medicine and National Poisons Information Service Guideline on Antidote Availability for Emergency

### ■ Vitamin B12 and Smoke Inhalation

Hydroxocobalamin should be considered in smoke inhalation victims, who have a severe lactic acidosis, are comatose, in cardiac arrest or have significant cardiovascular compromise.



## ■ Sodium thiosulfate

Poison Centre around the world list this as an adjuvant to other antidotes when treating metal overexposure. Sodium thiosulphate may be used intravenously or orally.

For more information, contact [ebb@tracemin.com](mailto:ebb@tracemin.com).

## ■ Formaldehyde and Vitamin K

The U.S. Environmental Protection Agency (EPA) acted to reduce exposure to formaldehyde vapor from certain wood products produced domestically or imported into the United States. "We are carrying out important measures laid out by Congress to protect the public from harmful exposure of this widely used chemical found in homes and workplaces", said Jim Jones, EPA's assistant administrator for the Office of Chemical Safety and Pollution Prevention. Formaldehyde vapor are inhaled during exposure of furniture, flooring, cabinets, bookcases and building materials made of plywood or smoke. Exposure to formaldehyde can cause adverse health effects including eye, nose and throat irritation, other respiratory symptoms and cancer.

Diagnostic: Tested is the metabolite of formaldehyde. Material: Urine, 10ml.

Antidote: Folic acid

Source: Official antidote list of the National Poisons Information Centre, Dept. Pharmacology, AIIMS, New Delhi, India

## ■ Citrus Pectin and Toxic Elements

Pectin demonstrates potential as an alternative to the conventional chelators, and some of our doctors have used this natural and safe chelator for many years with good results. Orally administered pectin has been shown to decrease lead absorption (Paskins-Hurlburt et al., 1977) and to reduce strontium bone and blood levels arising from an oral dose of this radioactive element (Waldron-Edward et al., 1965). The ability of pectin to reduce absorption and the bioaccumulation of toxic metals is attributed to pectin binding the metals in the digestive tract and preventing their absorption while facilitating their elimination in the feces. This may also include metals that have been absorbed previously and have been excreted into the bile or undergone enterohepatic circulation.

Source: Eliaz I. et al. The Effect of Modified Citrus Pectin on Urinary Excretion of Toxic Elements. *Phytotherapy Research* 2006; 20: 859-864

## ■ Gadolinium in Wastewater

The element Gadolinium (Gd) is a rare earth element, belonging to the Lanthanum group. Ionic Gd is highly toxic. It is increasingly used as a superconductor, in ceramics, electrochemicals, catalysts, in magnetics and luminescence as an additive material, and has been detected in wastewater.

This study focused on Gd-removal in wastewater and found pectin to be a highly effective and cost-efficient adsorbent of lanthanum metals. Pectin shows advantages due to its low toxicity, less amount of solvents needed, easy recovery of adsorbed metals, and simple regeneration process. Pectin is the heteropolysaccharides biopolymer contained in the cell wall of plants such as citrus rinds, rice husk, bran etc. This study focused on wastewater treatment and the use of durian rinds as a potential and inexpensive pectin resource, applicable for adsorption of toxic chemicals and heavy metals.

Source: Kusriani E. et al. Kinetics, mechanism, and thermodynamics of lanthanum adsorption on pectin extracted from durian rind. *Journal of Environmental Chemical Engineering* 2018; 6:6850-6588

## ■ Gadolinium in Urine

We have routinely tested Gadolinium in Urine for several years now, have accumulated a respectable database and communicated extensively with chelation therapists, radiologists and researchers.



We have noted that the concentration of gadolinium in urine shortly after Gd-Contrast Agents were administered are extremely high. In fact, values are so high (in baseline as well as provocation urines) that spectrophotometers are 'blinded' when such a urine is analyzed and as a result, a thorough cleaning of the affected instrument is required. Since we have more than one ICP-MS instrument, we are able to cope. However, cleaning an instrument after such exposure requires a specialist's care and generally results in at least one day of (costly) downtime.

We thus ask for your cooperation. When you fill out papers, please note the approximate time the last Gd-Contrast Agent was administered. This allows us to pay special attention to such samples and helps us to save time and money. With your help, we are able keep prices at a minimum.

## Medical Workshops and Conferences

### ■ International Conferences & Workshops 2020

02/01/2020 - **Chelation Workshop**  
02/02/2020 Kuala Lumpur, Malaysia (English)

If you are interested in further workshops on environmental issues, chelation, laboratory testing or metal toxicology, check our website:

<https://www.tracemin.com/en/workshops>

### ■ Webinars

At present, we have no scheduled english webinar.

If you are interested in English Webinar presentation, please let us know time and day of your liking.

The following Webinar presentations are available. A minimum of 10 attendees is requested, thus early registration is required:

- The Neurotoxicity of Metals
- Proper Use of Chelating Agents
- Diagnosing Metal Toxicity
- Organic Environmental Pollutants
- Environmental Pollutants

Online Seminar from our partner laboratory, registration here:

<https://www.edudip.com/academy/e.blaurock-busch>

Thank you for your attention. Let us know if you have questions.

And all the best

Your

E. Blaurock-Busch and Team