



Micro Trace Minerals Laboratory

40+ years of clinical & environmental
laboratory diagnostics

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MTM Newsletter

N° 18 - September 2016

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Laboratory News

■ **How valid are hair mercury levels?**

An Australian Naturopath asked this question and we answered:

Just recently, we completed at Quality Assessment Scheme of hair, urine and blood samples with the Quebec Centre of Toxicology. Our test results were within the given ranges for all elements with the exception of Thorium and Tin in blood. For these elements, our blood results were marginally below the low range, hair and urine values were within the expected norm. Our mercury results for hair, blood or urine were excellent.

The analysis of mercury in hair is not a problem in our laboratory and I can explain why many therapists still think mercury in hair is not relevant.

To do elemental testing in hair, we need to break down metal complexes before the analysis can take place. In the old days, we added metal-free acids to the sample tube, which remained open during the digestion period using heat. During this process, sulfur fumes and highly volatile elements such as Mercury escaped.

Today, we digest samples in closed tubes in microwave ovens. Nothing escapes. Under those conditions, mercury results reliably reflect the mercury concentration in hair.

As long as a metal circulates in blood, it can be deposited in tissue. If nothing circulates, nothing can be stored.

Toxins such as mercury have a great tendency to 'hide' in fatty tissue and are difficult to be accessed. They are basically fixed in place and are not released into the blood stream. Chelation is generally ineffective, unless we allow the body to redistribute. This takes time, meaning treatment pauses are essential. During weight loss, we also release toxins.



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■ Detoxifying Uranium (U)

Our report, *Uranium and other contaminants in hair from the parents of children with congenital anomalies in Fallujah, Iraq*, published in Conflict and Health 2011, drew attention to the possibility that depleted uranium is the cause of the increase in congenital birth anomalies and cancer in Fallujah, Iraq. We determined high levels of uranium and other potentially toxic metals in the hair of the Iraqi test groups, and have since found similar patterns in Indian children with physical and mental disabilities. We frequently find elevated uranium in hair and urine of people without disabilities and as a result, the question on how to remove uranium is asked.

The ATSDR (Agency for Toxic Substances and Disease Registry) lists key points:

- Everyone is exposed to uranium in food, air, and water as part of his/her natural environment. Most exposures do not warrant monitoring or treatment.
- Strategies for treatment and management of overexposed patients include removal from overexposure, decontamination, monitoring uranium biomarkers of exposure and biomarkers of effect (nephrotoxicity), **administration of sodium bicarbonate to maintain an alkaline urine, and pushing fluids to increase urine output.**
- Nephrotoxicity should reverse as overexposure ceases.

On our website, we recently focused on news from the researchers at the Helmholtz-Center Dresden-Rossendorf (HZDR), Germany and the University of Bern, Switzerland. Their work focused on the effect of uranium toxicity on microorganism and plant life. They reported that Glutathione efficiently decreases the chemical toxicity of uranium, meaning microorganism show a greater tolerance for uranium. Karim Fahmy explained, "We noticed that uranium binds to the carboxyl groups of glutathione, which results in an insoluble and nontoxic complex."

Reference:

Muhammad H. Obeid, Jana Oertel, Marc Solioz, Karim Fahmy, Mechanism of attenuation of uranyl toxicity by glutathione in *Lactococcus lactis*, in: Applied and Environmental Microbiology June 2016

The following graph indicates that only the mean values of uranium in baseline urine (0.069mcg/g creatinine) slightly exceed the upper norm of 0.60mcg/g creatinine, meaning slight exposures are noted. Our statistical evaluation of various urine provocation test indicates that none of the chelating agents, used alone or in combination with other chelation agents, shows promise. This is in accordance with information provided by Poison Center and various governmental agencies.

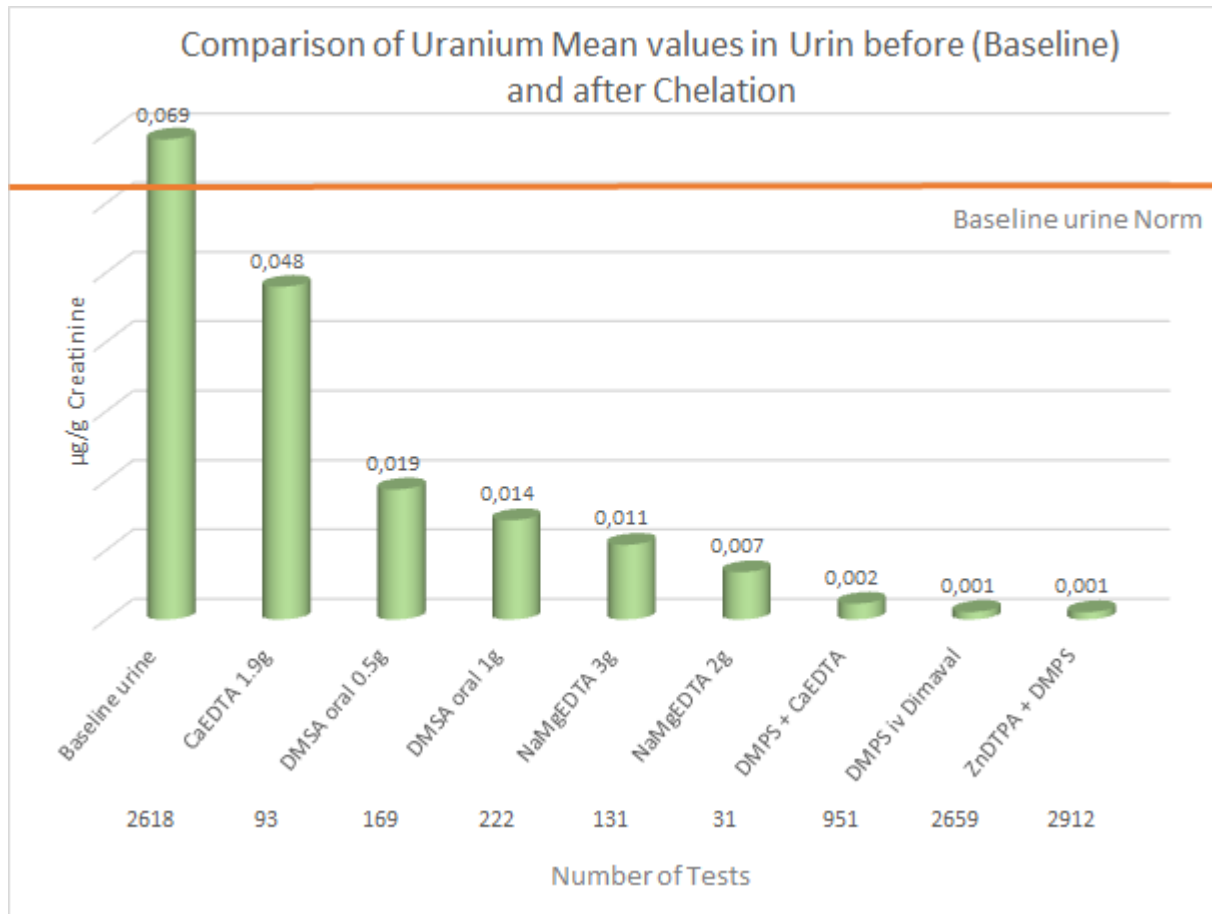


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Source: Micro Trace Minerals Database 2016

Summary: Alkalinizing the urine and paying attention to fluid intake and output seems the most appropriate way to treat a uranium exposure.

■ **Gadolinium (GD)**

The contrasting agent Gd-DTPA (Gadopentetat-Dimeglumin) is used for MRIs. As the name indicates, the element Gd is complexed with the chelating agent DTPA (Diethylenetriamine penta acetate). Unless complexed, gadolinium is toxic to humans. The pharmacokinetic behavior of intravenously delivered Gd-DTPA is similar to the well-known iodinated contrast agents used in urography and angiography; excretion of the Gd-DTPA complex is predominantly through the kidneys with greater than 90% recovery in 24 hour.

The element gadolinium is used in industry for the manufacture of electronic components, magnets and superconductors used for nuclear, microwave and radar technology.

Our data indicates that even days after an MRI, Gd-values are extremely high in unchallenged baseline urine, but decrease over time. At this time, we do not know how long traces of Gd remain in the system.



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When we analyze for Gd, we break down the metal complex and report the element Gd only. Our data base indicates that provocation urines may show extreme values as well, but unless we compare baseline values with provocation test results, we do not know if the Gd concentration found in a provocation urine is the result of the chelation therapy or simply reflects the baseline value.

■ Sampling Instructions - We are asking for your help

***If sampling is done outside your office,
please inform your patient of the following:***

- Do not fill tubes up to the rim, (see picture) esp. urine and stool samples.
It can make for an awful mess.
- Label tubes! It prevents sample mix-ups.
- Provide sufficient information by filling out the patient information sheet.
The information helps us with quality and probability controls.
- Please inform patients of laboratory costs,
which are listed on our Patient Information Sheet.



■ Aluminum and Barium in CaEDTA ampules

In our previous newsletter we focused on Aluminum. The chelator Desferal can be used for aluminum overexposure after the diagnoses has been verified in blood, baseline urine, stool and other diagnostic means, but administration of this drug can cause considerable side effects. We therefore evaluated the aluminum binding of the more common chelating agents and noticed an unusual percentage of slightly elevated aluminum values in NaCaEDTA provocation tests. This seemed to indicate that CaEDTA is a chelator of choice for aluminum or most people receiving this chelator are overexposed to aluminum.

Consequently, we tested one ampule of NaCaEDTA and found over 1200mcg/l Al and about 1900mcg/l Barium. This means, this 5ml ampule contain about 6mcg Aluminum and nearly 10mcg of Barium. No aluminum or barium could be detected in Dimaval ampules (DMPS from Heyl, Berlin). We also tested the raw material NaEDTA and found negative Al and Ba results.

On a note: We routinely test chelating agents either at doctors requests or because our routine statistics point towards potential problems. We always inform the manufacturer accordingly.



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Medical Workshops and Conferences

International Conferences & Workshops 2016

- 09/24/2016 **Chelation Therapy Workshop**
Novotel Hamburg City Alster, Luebeckerstr. 3
Hamburg, Germany (German)
- Presentation by Dr. E. Blaurock-Busch**
Risk reduction with Chelation Therapy as Interval Therapy in Cancer Patients
Congress Center Baden-Baden
10/30/2016 Baden-Baden, Germany (German / English)
For more information, please visit:
<http://www.medwoche.de/programm/english-programme-2016.html>

Webinar

- 10/12/2016 **Use of chelating agents** (DMPS, DMSA, EDTA, DTPA) and diagnostic tests to
confirm treatment success.
- Online Seminar registration here:
<https://www.edudip.com/w/207192>

For future workshops and updates, please visit:
<https://microtraceminerals.com/en/workshops>

If you have any questions please feel free to [contact us](#).

E. Blaurock-Busch and Team

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