



MTM Laboratory Information

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*Exchanging
Knowledge*

Workshops 2010

6. February 2010 Frankfurt

Organizer: Deutsche Ärztesgesellschaft für Metalltoxikologie

Information & Program: 06129-5029719 oder www.metallausleitung.de

3. March 2010 London, UK

Contact www.ecomed.org.uk

10. April 2010 Rome, Italy

Contact www.ainuc.it

1. & 2. Mai 2010 Eindhoven, NL

Contact: www.ibcmt.com

MTM Seminars

26. June 2010: Nuremberg

09. Oct. 2010: Berlin

Program & early bird fees: 09151-4332 oder service@microtrace.de

Your questions are important to us:

We receive and appreciate inquiries. Many concern questions involving the proper use of chelating agents. Because we like to help, we started an English blog:

<http://environmental toxicology.blogspot.com/>

Exchanging knowledge can only benefit us all.

Blog with us

Molecular weight of chelating agents

The question how the molecular weight (MW) of a chelating substance such as EDTA, DMSA or DMPS influences metal binding, has been brought to our attention.

Heinz Scholz, pharmaceutical chemist and journalist explains:

The EDTA-Anion has 2 free nitrogen atoms and 4 carboxyl groups i.e. it can bind 6 kations. Its MG = 292,2

DMSA: MG = 188,2; it has 2 SH-Groups

DMPS: MG = 188,3; it has 2 SH-Groups

It would be a fallacy to assume that EDTA, due to the higher MW, is a more effective chelating agent.

**DMSA
DMPS
EDTA
DTPA**

What we need to know

In Toxicology, there is no chelating substance or Antidote that treats all. Such miracle agent does not exist. Thus, we need to know specifics about metal intoxication and which chelating agent is most suitable.

- The EDTAs and DTPAs are oxygen-affine chelating substances; DMSA and DMPS are sulphur-affine. This affinity determines the specificity of the chelating agent, what metal is best bound and which one not. Molecular weight is secondary. This affinity explains why mercury is bound by the sulphur-affine chelating substances DMSA and DMPS and not by the EDTA or DTPAs.
- The amount of the chelator administered affects binding. For example, the infusion of 2gr EDTA over 2hrs will result in less metal binding than the administration of 3gr EDTA in 3hrs, both of which is 1gr/hr. Similarly, 100mg of oral DMSA will bind, mathematically spoken, 10x less than 1000mg of orally administered DMSA. An ampule containing 250mg DMPS will have a greater metal-binding effect than a 100mg capsule of DMPS.

**Effective
Chelation
Is
Based
On
knowledge**

**Diagnostic
Data**

**Following
Protocols
results
in effective
and safe
metal
detoxication**

**Assessing
Hair Mineral
Analysis**

NEW

**Statistical
Evaluation
Of
Diagnostic
Data**

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- c) The method of administration influences metal binding and metal excretion. An infusion or injection quickly reaches the blood stream and becomes active; the renal canal is more easily affected and detoxified. The content of a capsule is first active in the digestive tract where it quickly and easily binds available metals. The digestive tract is first detoxified before the oral chelator reaches the blood stream. The more metals are found in the digestive tract, the less of the chelating agents 'claws' are free for additional binding elsewhere. It is thus logical to detoxify the digestive tract before oral chelation is started, or acknowledge that fecal matters carry a heavy metal load. Fecal metal testing can be used to compare the metal concentration before and after chelation.

These are some of the topics of our workshops. We particularly discuss the necessity of following protocols and why certain procedures are necessary to achieve results. More under www.microtrace.eu or www.microtraceminerals.com

Heavy Metal Assessment in Hair Analysis

As long as metals circulate in the blood stream, the hair root is supplied with essential or toxic elements. When metals are tightly bound and fixed to various organs, they no longer circulate in significant concentrations. Blood values will be inconspicuous and go unnoticed. Similarly, the hair is no longer supplied with significant amounts of essential or toxic metals: Hair concentrations will drop over time.

Urinary excretion levels are a direct indication of the chelating substances effectiveness, and a provocation with the appropriate chelating substance (also called urine challenge) can provide surprising results.

The German toxicologist Dr. Dauderer wrote years ago about Hashimoto: „the true cause is amalgam.“ DMPS and/or DMSA detoxify the thyroid (among other organs).

NEW! Statistical Evaluation of Diagnostic Data

If we have repeatedly test a patient of yours (hair, blood or urine), we can statistically compare data and thus provide an indication of the treatment success

A urine data evaluation and comparison only makes sense if the same chelator and protocol was used. Occasionally, we are asked to evaluate data from others laboratories. Sorry, we don't.

Sample submission and Patient Information

- Urine data are converted from mcg/L or mg/L to mcg/g or mg/g creatinine. We can only complete reports when patient age or date of birth is provided.
- Provide us with details regarding type and amount of chelator used. It helps us with data validation and statistical evaluations as outlined above.
- For ALL GENETIC TESTING, we need the signature of patient and doctor. If any is missing, we are not legally allowed to perform the test.

Reports via e-mail and patient inquiries

We are often asked to submit reports to patient and doctor. If the e-mail address is not written legibly, we cannot provide this service.

If you have questions, please contact me personally at ebb@microtrace.de I will do my best to answer your question.