



## Which Toxic Heavy Metal Test is Best?



When the decision is made to test for heavy metals, the pros and cons of various testing strategies can easily become overwhelming for many patients. For this reason, today we're taking the time to explain both the benefits and drawbacks of each method of testing. The common methods of heavy metal testing in people involve taking samples of either urine, blood or hair from the patient and sending them into a local independent lab.

### Pros & Cons of Common Heavy Metals Testing Methods:

#### Urine Testing

- Tests the body's ongoing excretion of heavy metals
- Best for establishing current level of exposure/excretion
- Can be compared to the National Health and Nutrition Examination Survey (NHANES) results
- Can be inaccurate if kidneys are compromised or if your detoxification pathways are compromised

#### Blood Testing

- Tests acute heavy metal poisoning
- Best if you are in an emergency/hospitalization situation and might be poisoned
- Not as accurate at assessing ongoing exposure levels

#### Hair

- Easiest to collect
- Not an accurate reflection of heavy metal accumulation - not all metals will show up in the hair sample
- Sample can be contaminated due to exposure to heavy metals from the air, hair products, or water that you wash your hair in

## How To Interpret Heavy Metals Test Results?

While medical laboratories pride themselves on the accuracy of their results, it's important for patients to understand the advantages and limitations of the test procedures. We also need to be very clear in how we interpret the results. As in, what is the exact standard we should use to define healthy versus unhealthy levels of heavy metals? Labs generally give a "normal/healthy range" based on a percentile of all of the samples that the lab has collected. In this way, labs grade their heavy metal tests on a curve derived from the lab's average results, which can be somewhat misleading for patients for a few reasons. One problem with grading lab results based on the lab average is that heavy metal exposure may be more common among people seeking heavy metal testing, thus skewing the curve. Another issue is that grading based on the lab average seems to assume that the lab average is healthy, which may not be true.

Heavy metal toxicity is far too serious to simply grade on a curve and hope one's results are good enough. For this reason, we have opted to use the objective standards developed by the United States CDC (Centers For Disease Control) guidelines known as NHANES (National Health And Nutrition Examination Survey) at our integrative healthcare clinic in Portland, Oregon.

### Pre-Provocation vs Post-Provocation: Why do two urine samples?

"Pre-provocation" means that the heavy metal test is done before any treatment for heavy metals. If pre-provocation results are high, it indicates that one has current exposure to heavy metals. Post-provocation is when a patient is given a chelating agent prior to the test. A chelating agent is a fancy term for something that binds to heavy metals trapped in bones, fat and organ tissue and pulls them out of the body. Post-provocation tests are useful for uncovering a past exposure to heavy metals that may be causing problems now or in the near future. Some healthcare providers postulate that heavy metals trapped in bone, fat and organs won't harm us, but that optimistic view fails to account for fluctuating weight and bone density which can cause old heavy metals to be released back into the bloodstream.

On a post-provocation heavy metals test, the patient is given a chelating agent prior to undergoing the heavy metal test. Examples of common chelating agents are DMSA, DMPS and EDTA. The benefit of a post-provocation test is that it gives our doctors insight into whether heavy metals are being stored in body tissues - bone, fat, organs, etc.

Why don't we just do the post-provocation test first? The answer is that NHANES results are pre-provocation, so we want to use an apples-to-apples comparison to determine whether further testing and/or IV Chelation Therapy is appropriate. Also, it is good to know if a patient has ongoing exposure to heavy metals because there is no use in conducting a post-provocation test if pre-provocation already shows a clear problem.