

## Toxic Element Clearance Profile

This **Toxic Element Clearance Profile** measures urinary excretion of a diverse range of potentially harmful elements, both well known toxics such as lead and mercury, as well as new technology toxics such as niobium.

The **Toxic Element Clearance Profile** offers an advanced, comprehensive assessment of toxic and potentially toxic elements excreted in the urine. In addition to measuring classic elemental toxics, this profile includes elements used in medical, aerospace, nuclear and high-tech electronics industries. Use of these potential toxins is increasing because of their growing commercial, industrial, and medical applications.

### Sources of Exposure:

Accumulations of these toxics can occur in the human body in response to occupational exposures or to environmental exposures from toxic release in air, soil, or industrial waste streams. These include:

- Metal refining
- Alloying
- Plating and parts manufacture in aerospace and machine tool industries
- Fabrication of nuclear reactor fuel assemblies
- Electronics and computer manufacturing

According to the EPA, the U.S. has the largest electronics (including computer) workforce in the world. Exposures to the measured elements can occur in other occupations as well, including:

- Welding and metal shaping
- Plumbing
- Oil refining
- Manufacture of pigments and coatings
- Military or police service (with weapons use)
- Handling and disposal of wastes
- Petrochemical production

### Health Consequences of Exposure:

Evidence suggests that chronic toxic element exposure can adversely affect:

- Energy levels
- Reproductive function
- Cancer risk
- Degenerative conditions
- Neurological development and function
- Respiratory, cardiac, hepatic and immune functions
- Cognitive and emotional health

Researchers are discovering detrimental health effects of toxic heavy metals at lower and lower exposure levels. This raises the issue of whether any toxic element level in the body is safe.

### Toxic Element Testing:

The **Toxic Element Clearance Profile** assesses urinary excretion of elements acquired through either chronic or acute exposure. The test enables practitioners to effectively monitor the progress of detoxification regimens and nutrient element status during treatment. All toxic metals are reported as micrograms/g creatinine or as micrograms per 24 hours (if a 24-hour urine specimen is provided).

### “Provocative” Urine Testing:

Urine can be collected following the administration of a “challenge” agent (such as EDTA, DMSA, DMPS, and D-penicillamine) targeting specific toxic elements. Depending on the agent administered, urine collection may be spot or short-term (2-6 hours), intermediate (8-12 hours) or a complete 24-hour collection. Since many detoxification agents are element-specific, this approach is best utilized when the clinician suspects specific heavy metal toxicities.

**Toxic Element Clearance Profile**  
in  $\mu\text{g/g}$  Creatinine

63 Zillico Street  
Asheville, NC 28801  
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Patient: **SAMPLE**  
**PATIENT**

Age: 40

Sex: M

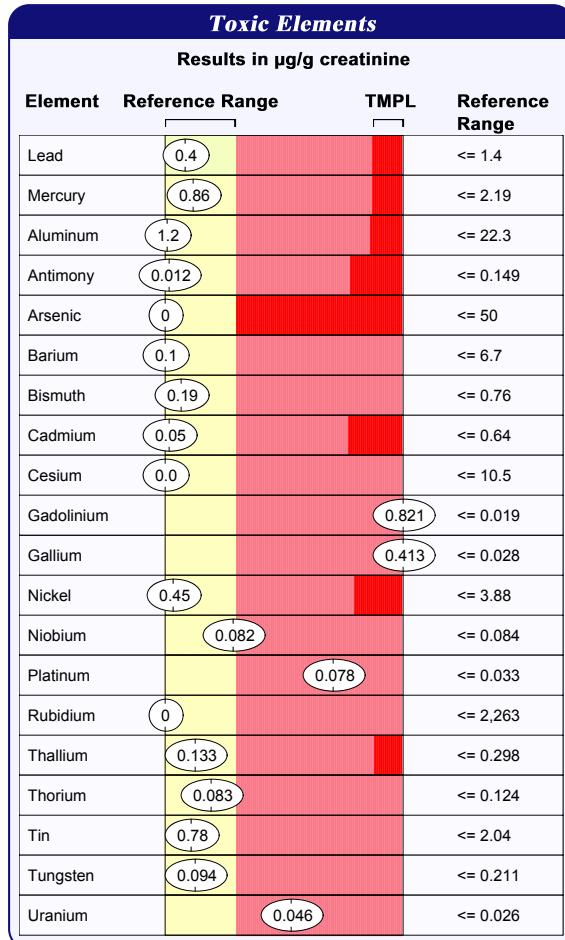
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**Order Number:**

Completed: September 09, 2005

Received: July 20, 2005

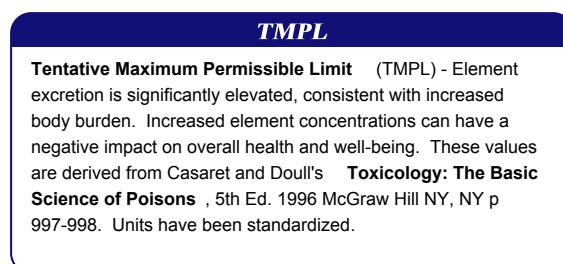
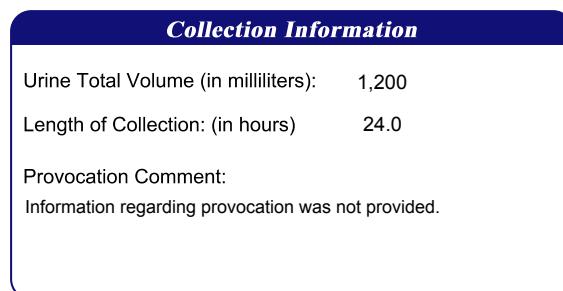
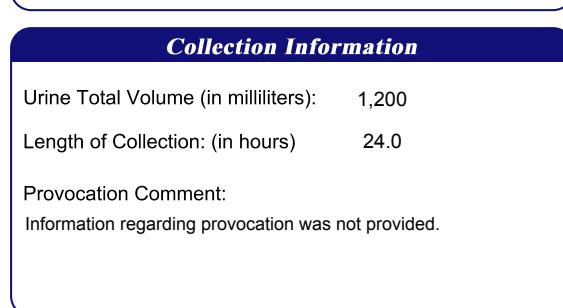
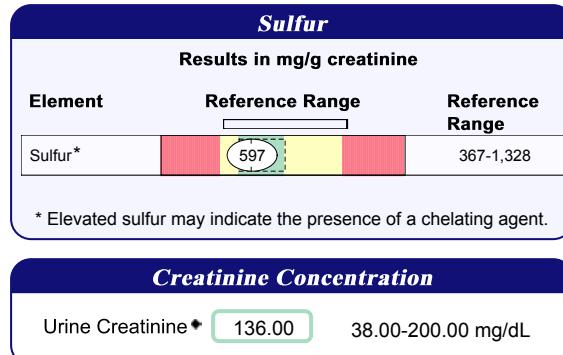
Collected: July 20, 2005



The performance characteristics of all assays have been verified by Genova Diagnostics, Inc. Unless otherwise noted with ♦ as cleared by the U.S. Food and Drug Administration, assays are For Research Use Only.

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TX-CR RMS 314 Rev 7



**This test reveals important clinical information about:**

- **Urinary excretion of a diverse spectrum of toxic elements and elements**, which are toxic at excessive levels, for a total of 20 potentially toxic elements
- **The need for and progress of detoxification therapies**
- **Levels of toxic elements ratioed to creatinine**, which provides enhanced accuracy and more flexibility in specimen collection (spot, short-term, intermediate, or 24-hour)

For test kits, clinical support, or more information contact:

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More detailed publications with references are also available: [www.GDX.net](http://www.GDX.net)