

Urine element testing can be used to measure both essential and toxic elements. Measuring essential elements reveals information about your diet and how your body absorbs nutrients. Measuring toxic elements in urine may help identify possible contributors to chronic health problems.

Toxic Elements & Health

Toxic elements can block the beneficial effects of essential elements (e.g. zinc, calcium) by replacing them in important biochemical processes. For example, lead can replace calcium in bone. Toxic elements can also increase free radical levels that contribute to tissue inflammation and chronic disease.

A single large exposure to a toxic element is rare and generally considered a medical emergency. On the other hand, it is relatively easy for small amounts of toxic elements to accumulate over time. Measurement of toxic elements in urine can help determine if toxic element accumulation has occurred, although having higher than expected levels does not prove toxic elements is causing symptoms.

It is important to speak with a healthcare professional if you are concerned that toxic elements are contributing to your health problems. The following diseases and conditions have been associated with toxic element exposure:

Central Nervous System: tingling in the hands and feet, mental confusion, and an abnormal gait are symptoms that could be caused by ongoing exposure to small amounts of toxic elements.

Heart Disease: chronic exposure to toxic elements may damage red blood cells and/or contribute to risk for heart disease.

Digestion: inflammation in the gastrointestinal system with vomiting and/or diarrhea has been linked to toxic element exposure.

Sources of Toxic Elements

Toxic elements are found in common household products and may contribute to a variety of symptoms.

- **Aluminum** is found in cooking utensils, antiperspirants, some pickled foods, toothpaste, nasal spray, automotive exhausts, ceramics and baking powder. Signs of toxicity may include impaired memory & increased risk of heart disease.
- **Arsenic** is found in pressure-treated wood used in decks and playground equipment. Early signs of arsenic toxicity may include headaches, fatigue, restlessness, insomnia, drowsiness, dizziness, stomach aches, and pain.
- **Cadmium** is found in cigarette smoke, some paint pigments, and in a variety of industrial products. Fatigue may be an early sign of cadmium toxicity.
- **Lead** is still around from the days when we used leaded gasoline in cars, lead solder in plumbing and leaded paints. Lead exposure may contribute to mood and personality problems.
- **Mercury** is found in dental fillings, fluorescent lights, and some electronics. Chronic exposure to mercury primarily affects the brain and nervous system. Symptoms like: weakness, fatigue, numbness in fingers and toes, weight loss and gastrointestinal disturbances are common with ongoing exposure to mercury.
- **Tin** is found in canned foods. If acidic foods are sealed in an un-lined tin can, significant absorption of tin can occur. Excess absorption of tin may contribute to gastrointestinal symptoms.

Toxic Elements

Elements considered potentially toxic to human life are not normally found in significant quantities in the body. Results for toxic elements are graphed, but if toxic element levels are very small (below the detection limit), then no bar will be displayed for that element.

Essential Elements

Essential elements (also called minerals) and elements considered non-toxic are graphed. Unlike toxic elements, levels of essential elements can be higher or lower than the average, so results can show above or below the middle line.

Chelation

The word chelate comes from a Greek word meaning claw. A chelating agent removes elements from the fluid around cells and brings them back into circulation so they can be eliminated in urine.

Information is for educational purposes only. It is not meant as medical advice and any treatment decisions should be made with the knowledge or consent of your healthcare professional.

Urine Element Analysis

What Do Urine Element Test Results Mean?

A urine element test often includes a baseline (pre-provocation) followed by a provoked (after chelating agent given) urine test. The pre-provocation test measures the levels of toxic and/or essential elements present in urine. However, some toxic elements may remain in 'storage', so chelating agents are given to "provoke" the release of toxic elements from fluid around cells so they can be eliminated in urine.

Your healthcare professional will carefully review your results and decide on the best course of treatment for you.



Why Test?

Good health has a lot to do with maintaining balance: the right balance of work and play, the right balance of nutrients in the diet, and the right kinds of foods.

Toxic element exposure may be a contributing factor to a variety of chronic illnesses. Urine element testing is useful for monitoring treatment of toxic element exposure.

Rocky Mountain Analytical is committed to offering tests that identify imbalances and other conditions - so they can be corrected before disease develops!

Chelation and Chelating Agents

Some healthcare professionals use intravenous chelating agents, while others give chelating agents in pill form. The following is a list of some natural and chemical chelating agents:

- **alpha lipoic acid** is transformed in the body into a compound (dithiol dihydrolipoic acid) that is able to chelate arsenic and mercury.
- **chlorella** is a type of algae that helps accelerate the removal of mercury stored in tissues such as bone, muscles, ligaments, connective tissue and the gut wall.
- **cilantro** is a plant in the parsley family shown to be an effective chelator of CNS toxic metals. Its active component is a mercaptan that can penetrate the blood brain barrier. [Omura et al]
- **DMPS** is an amino acid used to bind mercury, arsenic, bismuth and/or lead.
- **DMSA** can be given intravenously or orally and is commonly used to chelate lead, arsenic and mercury.
- **EDTA** is commonly given intravenously to chelate lead.
- **modified citrus pectin** is a highly viscous plant fibre taken orally to chelate arsenic, cadmium and lead.

Lifestyle

- Adequate fluid intake is important when chelating agents are used.
- Mercury amalgams ('silver' fillings in teeth) are a common source of mercury toxicity. Some dentists specialize in assessing patients for evidence of mercury toxicity. If you have chronic health problems plus mercury amalgams, removal of amalgams may be beneficial.
- Minimize exposure to toxic elements. For example: eat tuna infrequently, buy clothing made from organically grown materials and so on.

About Us

Rocky Mountain Analytical was founded in 2002 with a mission to offer tests that focus on early identification and prevention of disease.

Rocky Mountain Analytical is an accredited medical laboratory located in Calgary, Alberta. Accreditation means tests performed by Rocky Mountain Analytical are regularly reviewed for quality, accuracy and reproducibility by the College of Physicians & Surgeons of Alberta.

Ask your healthcare professional whether a test is right for you.

