



Partner Update

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Expansion of the Trace Element Testing Portfolio

On November 13, 2017 Dynacare will complete the expansion of its **Trace Element** testing portfolio.

These tests will now largely be performed using an in-house developed and validated methodology-which deploys state of the art inductively coupled plasma tandem mass spectrometry (ICP-MS/MS). By reducing interferences and improving sensitivities, this ICP-MS/MS-based testing has higher accuracy and improved precision than traditional atomic absorption spectroscopy (AAS) or inductively coupled plasma mass spectrometry (ICP-MS)-based quantitation.

The introduction of this technology has also permitted a significant expansion to our in-house trace element testing catalogue. Individual trace element tests are now available in whole blood, plasma, red blood cell and urine (random and 24 hour collection) specimen types. In addition, comprehensive test panels for essential, toxic and total trace element testing within these biological matrices are also available (see tables below).

Whole Blood	Trace Elements
Individual Elements	Arsenic (Total), Bismuth, Cadmium, Cobalt, Copper, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Selenium, Thallium, Tin, Vanadium and Zinc
Toxic Whole Blood Panel	Arsenic (Total), Cadmium, Lead, Mercury, Nickel and Thallium

Red Blood Cell	Trace Elements
Individual Elements	Arsenic (Total), Bismuth, Cadmium, Chromium ¹ , Cobalt, Copper, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Selenium, Thallium, Tin, Vanadium and Zinc
Essential Red Blood Cell Panel	Chromium, Cobalt, Copper, Magnesium, Manganese, Molybdenum, Selenium, Vanadium and Zinc
Toxic Red Blood Cell Panel	Arsenic (Total), Cadmium, Lead, Mercury, Nickel and Thallium
Total Red Blood Cell Panel	Arsenic (Total), Cadmium, Chromium ¹ , Cobalt, Copper, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Selenium, Thallium, Vanadium and Zinc

Plasma	Trace Elements
Individual Elements	Aluminum, Antimony, Arsenic (Total), Barium, Beryllium, Bismuth, Boron, Cadmium, Chromium, Cobalt, Copper, Iodine, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Selenium, Strontium, Thallium, Tin, Uranium, Vanadium and Zinc
Essential Plasma Panel	Chromium, Cobalt, Copper, Manganese, Molybdenum, Selenium, Vanadium and Zinc
Toxic Plasma Panel	Aluminum and Nickel
Total Plasma Panel	Aluminum, Chromium, Cobalt, Copper, Manganese, Molybdenum, Nickel, Selenium, Vanadium and Zinc

Urine	Trace Elements
Individual Elements (Random and 24 hour Collection)	Aluminum, Arsenic (Total), Barium, Beryllium, Bismuth, Boron, Cadmium, Chromium, Cobalt, Copper, Iodine, Iron, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Selenium ¹ , Strontium, Thallium, Tin, Uranium, Vanadium and Zinc
Essential Urine Panel (24 hour Collection)	Boron, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Molybdenum, Potassium ¹ , Selenium ¹ , Sodium ¹ , Strontium, Tin, Vanadium and Zinc
Toxic Urine Panel (24 hour Collection)	Aluminum, Antimony, Arsenic (Total), Barium, Beryllium, Bismuth, Cadmium, Lead, Mercury, Nickel, Thallium and Uranium
Total Urine Panel (24 hour Collection)	Aluminum, Antimony, Arsenic (Total), Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium ¹ , Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium ¹ , Selenium ¹ , Sodium ¹ , Strontium, Thallium, Tin, Uranium, Vanadium and Zinc

¹ Test not performed by ICP-MS/MS

The reporting of patient results has also been enhanced for each of the above listed ICP-MS/MS tests. Reference ranges have been established in-house using non-occupationally exposed patient populations. If available, the Biological Exposure Index (BEI) of each trace element is also included in the report for all whole blood and urine (random and 24 hour collection) testing. The quoted BEI are based on the 2016 Documentation of the Threshold Limit Values and Biological Exposure Indices from the American College of Governmental Industrial Hygienists (ACGIH®). These thresholds represent a concentration below which most workers should not experience adverse health effects from exposure and are widely recognized in Canada.

Additional trace element testing, including inorganic and organic arsenic speciation, also remains available through Dynacare. If you are interested in a test not listed in this notice please consult dynacare.ca.

For further information regarding the trace element testing, test ordering or result reporting, please contact: Adam Ptolemy, PhD, ptolemya@dynacare.ca or 800.668.2714 x 1256.