

Total Toxins - Summary

High					
		Mycotoxins		Heavy Metals	
		Environmental Toxins			
Test Name	Current	Previous	Result		Reference
			75th	95th	
 Glyphosate (ug/g)	9.29		1.65	7.6	≤7.6
 Lead^ (ug/g)	2.42		0.52	1.16	≤1.16
 Dihydrocitrinone (ng/g)	19.13		9.3	16.53	≤16.53
 Ochratoxin A (OTA) (ng/g)	19.56		3.83	6.8	≤6.8
Suboptimal					
		Mycotoxins		Heavy Metals	
		Environmental Toxins			
Test Name	Current	Previous	Result		Reference
			75th	95th	
 Bisphenol A (BPA)^ (ug/g)	2.69		2.12	5.09	≤5.09
 Arsenic^ (ug/g)	19.55		11.9	52	≤52
 Aflatoxin G1 (ng/g)	4.40		3.68	6.53	≤6.53
 Roridin A (ng/g)	4.73		4.28	7.6	≤7.6
Creatinine					
Test Name	Current	Previous	Result		Reference
Urine Creatinine (mg/mL)	1.65		0	2.16	0.25-2.16

Aflatoxin

Test Name	Current	Previous	Result		Reference
			75th	95th	
Aflatoxin G1 (ng/g)	4.40		<div><div></div></div>		≤6.53
			3.68	6.53	

BACKGROUND

Aflatoxin M1 is a metabolite of aflatoxin B1, which is produced by molds such as *Aspergillus flavus* and *Aspergillus parasiticus*. Aflatoxin M1 is formed when animals, particularly dairy cows, consume feed contaminated with aflatoxin B1, and it is excreted in their milk.

ASSOCIATED RISK

Aflatoxin M1 has been regarded as a human carcinogen. It can cause liver damage, immune suppression, internal haemorrhaging, muscle tremors, and impact gain and efficiency.

POSSIBLE SOURCES

Contaminated milk. Aflatoxin M1 is mainly found in the milk of cattle fed with contaminated aflatoxin feed. Consumption of such animal products exposes humans to Aflatoxin M1.

DETOX SUGGESTIONS

To mitigate aflatoxin M1 effects, it is important to include a diet rich in antioxidants, stay hydrated, and consider liver-supporting supplements like milk thistle. Prevention through food safety practices is key, as there is no direct method to detoxify aflatoxin from the body.

Other Mycotoxins

Test Name	Current	Previous	Result		Reference
			75th	95th	
Dihydrocitrinone (ng/g)	19.13		<div><div></div></div>		≤16.53
			9.3	16.53	

BACKGROUND

Dihydrocitrinone (DHC) is a metabolite derived from Citrinin (CTN), a mycotoxin produced by molds such as *Aspergillus*, *Penicillium*, and *Monascus*. CTN exposure is associated with nephropathy due to its ability to increase mitochondrial membrane permeability in the kidneys. Additionally, CTN has been identified as carcinogenic.

ASSOCIATED RISK

Exposure to DHC, as a metabolite of CTN, poses significant health risks, particularly related to nephropathy, or kidney damage. CTN's ability to disrupt mitochondrial function in renal cells contributes to nephrotoxicity. Moreover, CTN has carcinogenic properties, potentially increasing the risk of cancer upon exposure.

POSSIBLE SOURCES

DHC exposure occurs through contaminated grains, fruits, and spices, as well as via metabolic transformation of CTN in the body after ingestion.

DETOX SUGGESTIONS

Activated charcoal solutions act as adsorbents, binding the toxin in the gastrointestinal tract and enhancing its removal from the body through bowel excretion. Antioxidants help mitigate trichothecene-induced damage by combating reactive oxygen species production. A diet rich in probiotics, vitamins, nutrients, proteins, and lipids is effective in reducing trichothecene poisoning symptoms.

Other Mycotoxins

Test Name	Current	Previous	Result		Reference
			75th	95th	

Ochratoxin A (OTA) (ng/g)	19.56		<div><div></div><div></div><div></div></div>		≤6.8
			3.83	6.8	

BACKGROUND

Ochratoxin is a mycotoxin produced by various fungal species such as *Aspergillus ochraceus*, *Aspergillus carbonarius*, *Aspergillus niger* and *Penicillium verrucosum*.

ASSOCIATED RISK

Ochratoxin A has been recognised as a renal toxin owing to its ability to induce nephrotoxicity and renal tumors. It displays a long elimination half-life and stimulates the major inflammatory cytokines released. Ochratoxin A is efficiently absorbed from the gastrointestinal tract into the small intestine where it seen to effectively interrupt the intestinal barrier functions.

POSSIBLE SOURCES

Contaminated Barley, oats, rye, wheat, coffee beans, pork.

DETOX SUGGESTIONS

Detoxification of ochratoxin involves the use of activated charcoal (AC) to bind and neutralize the toxin in the gastrointestinal tract. To minimize the risk of nutrient depletion, AC should be taken separately from essential nutrients. Concurrent use of an oral multimineral formula or IV nutrient therapy can help replenish any lost nutrients during detoxification.

Trichothecenes

Test Name	Current	Previous	Result		Reference
			75th	95th	

Roridin A (ng/g)	4.73		<div><div></div><div></div><div></div></div>		≤7.6
			4.28	7.6	

BACKGROUND

Roridin A, a cytostatic compound, was isolated from cultures of *Myrothecium verrucaria* and *Myrothecium roridum*.

ASSOCIATED RISK

Experiments have demonstrated that exposure to Roridin A poses associated risks including nasal inflammation, increased secretion of mucus, and potential damage to the olfactory system.

POSSIBLE SOURCES

Oral, dermal, inhalation, and parenteral (contaminated drugs).

DETOX SUGGESTIONS

Detoxification strategies for Roridin A include the use of activated charcoal solutions as adsorbents to bind the toxin in the gastrointestinal tract and facilitate its removal through bowel excretion. Additionally, antioxidants can mitigate trichothecene-induced damage by combating the production of reactive oxygen species. A diet rich in probiotics, vitamins, nutrients, proteins, and lipids aids in reducing symptoms of trichothecene poisoning.

Creatinine

Test Name	Current	Previous	Result		Reference

Urine Creatinine (mg/mL)	1.65		<div><div></div><div></div><div></div></div>		0.25-2.16
			0	0.24	2.16

Aflatoxin

Test Name	Current	Previous	75th	Result	95th	Reference
Aflatoxin B1 (AFB1) (ng/g)	2.84		3.9		6.93	≤6.93
Aflatoxin B2 (AFB2) (ng/g)	0.16		4.58		8.13	≤8.13
Aflatoxin G1 (ng/g)	4.40		3.68		6.53	≤6.53
Aflatoxin G2 (ng/g)	1.86		6.08		10.8	≤10.8
Aflatoxin M1 (ng/g)	2.92		3.6		6.4	≤6.4

Other Mycotoxins

Test Name	Current	Previous	75th	Result	95th	Reference
Chaetoglobosin A (CHA) (ng/g)	4.74		17.93		31.87	≤31.87
Citrinin (CTN) (ng/g)	0.71		7.05		12.53	≤12.53
Dihydrocitrinone (ng/g)	19.13		9.3		16.53	≤16.53
Enniatin B1(ENN B1) (ng/g)	0.13		0.13		0.22	≤0.22
Fumonisin B1 (ng/g)	1.06		3.45		6.13	≤6.13
Fumonisin B2 (ng/g)	2.95		4.05		7.2	≤7.2
Fumonisin B3 (ng/g)	2.34		6.08		10.8	≤10.8
Gliotoxin (ng/g)	54.55		116.93		207.87	≤207.87
Mycophenolic Acid (ng/g)	0.15		3.6		6.4	≤6.4
Ochratoxin A (OTA) (ng/g)	19.56		3.83		6.8	≤6.8
Patulin (ng/g)	4.40		6.53		11.6	≤11.6
Sterigmatocystin (STC) (ng/g)	0.09		0.3		0.53	≤0.53
Zearalenone (ZEN) (ng/g)	0.21		0.38		0.67	≤0.67

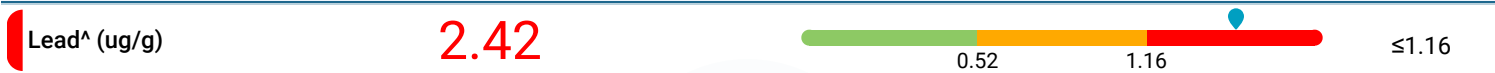
Trichothecenes

Test Name	Current	Previous	75th	Result	95th	Reference
Deoxynivalenol(DON) (ng/g)	3.05		37.95		67.47	≤67.47

Trichothecenes					
Test Name	Current	Previous	Result		Reference
			75th	95th	
Diacetoxyscirpenol (DAS) (ng/g)	0.14		2.4	4.27	≤4.27
Nivalenol (NIV) (ng/g)	0.85		1.8	3.2	≤3.2
Roridin A (ng/g)	4.73		4.28	7.6	≤7.6
Roridin E (ng/g)	<0.05		0.75	1.33	≤1.33
Roridin L2 (ng/g)	0.42		3.83	6.8	≤6.8
Satratoxin G (ng/g)	<0.05		0.1	0.18	≤0.18
Satratoxin H (ng/g)	0.09		0.1	0.18	≤0.18
T-2 Toxin (ng/g)	0.10		0.1	0.18	≤0.18
Verrucarin A (ng/g)	0.65		0.75	1.33	≤1.33
Verrucarin J (ng/g)	1.40		5.18	9.2	≤9.2

Heavy Metals

Test Name	Current	Previous	75th	Result	95th	Reference
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POSSIBLE SOURCES

Leaded gasoline, smelting of lead and its combustion, pottery, boat building, lead-based painting, lead-containing pipes, battery recycling, grids, pigments, and printing of books.

ASSOCIATED RISK

Lead, a highly toxic metal, affects nearly every organ, targeting the brain and central nervous system, leading to coma, convulsions, and death. Children are especially vulnerable, experiencing impaired brain development, reduced IQ, and behavioral issues. Lead exposure also causes anemia, hypertension, kidney problems, immunotoxicity, and reproductive issues, often attributed to alterations in brain proteins.

DETOX SUGGESTIONS

Once lead enters the body, it tends to accumulate in bones, posing a challenge for removal. Chelation therapy offers a solution by employing medications capable of binding to and extracting toxic metals from the body. These drugs function by chelating to metals present in the bloodstream and facilitating their elimination through urine or stool.



POSSIBLE SOURCES

Ingestion, inhalation, contaminated drinking water, dermal exposure, industrial manufacturing, food preservative, smoking, food grown in arsenic-contaminated soils, and cosmetics.

ASSOCIATED RISK

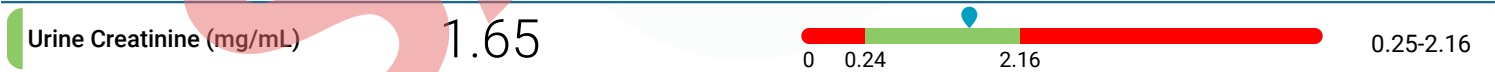
Acute arsenic poisoning includes diarrhea, vomiting, abdominal pain, muscle cramping, and numbness and tingling of extremities. Conversely, chronic exposure to arsenic is associated with severe health implications including skin, bladder, and lung cancer, heart attack, pulmonary disease, cardiovascular diseases, kidney failure, and diabetes.

DETOX SUGGESTIONS

Chelation therapy is commonly used for arsenic detoxification. Dimercaptosuccinic acid (DMSA) and dimercaptopropanesulfonic acid (DMPS) are chelating agents that bind to arsenic, facilitating its excretion through urine. These agents are administered orally and are effective in removing arsenic from the body. [18] Additionally, antioxidants such as selenium may help mitigate arsenic toxicity by reducing oxidative stress and promoting detoxification processes.

Creatinine

Test Name	Current	Previous	Result	Reference
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Heavy Metals					
Test Name	Current	Previous	Result		Reference
			75th	95th	
Aluminum (ug/g)	<3		17.83	45.15	≤45.15
Antimony^ (ug/g)	0.04		0.07	0.16	≤0.16
Arsenic^ (ug/g)	19.55		11.9	52	≤52
Barium^ (ug/g)	<1		2.33	5.59	≤5.59
Beryllium^ (ug/g)	<0.1		0.2	0.76	≤0.76
Bismuth (ug/g)	<0.1		0.58	2.53	≤2.53
Cadmium^ (ug/g)	<0.1		0.29	0.8	≤0.8
Cesium^ (ug/g)	3.26		6.37	10.3	≤10.3
Gadolinium (ug/g)	<0.05		0.17	0.45	≤0.45
Lead^ (ug/g)	2.42		0.52	1.16	≤1.16
Mercury^ (ug/g)	0.11		0.57	1.61	≤1.61
Nickel (ug/g)	3.58		6.37	12.13	≤12.13
Palladium (ug/g)	<0.1		0.15	0.2	≤0.2
Platinum^ (ug/g)	<0.05		0.1	0.9	≤0.9
Tellurium (ug/g)	0.10		0.42	0.89	≤0.89
Thallium^ (ug/g)	<0.1		0.24	0.43	≤0.43
Thorium (ug/g)	<0.01		0.02	0.07	≤0.07
Tin^ (ug/g)	<0.2		1	3.72	≤3.72
Tungsten^ (ug/g)	<0.04		0.12	0.33	≤0.33
Uranium^ (ug/g)	0.01		0.02	0.04	≤0.04

Environmental phenols

Test Name	Current	Previous	75th	Result	95th	Reference
Bisphenol A (BPA)^ (ug/g)	2.69		2.12		5.09	≤5.09

BACKGROUND

BPA is one of the highest volume of chemicals produced worldwide. It is a starting material for the synthesis of plastics. BPA-based plastic is clear and tough, and is made into plastic bottles including water bottles, sports equipment, CDs, and DVDs. Epoxy resins containing BPA are used to line water pipes, as coatings on the inside of many food and beverage cans and in making thermal paper such as that used in sales receipts.

ASSOCIATED RISK

Exposure to Bisphenol A cause fertility problems, male impotence, heart disease and other conditions. BPA is a xenoestrogen, exhibiting estrogen-mimicking, hormone-like properties that raise concern about its suitability in some consumer products and food containers.

POSSIBLE SOURCES

The main source of BPA contamination in humans is through food, primarily driven by the exposure of animals and raw materials to BPA, the accumulation of BPA in the environment, and the contact of food with polymers containing this substance. Inhalation is the second main source of exposure. BPA can accumulate in household dust and be inhaled.

DETOX SUGGESTIONS

The detoxification mechanism for BPA involves sweating, as facilitated by infrared and steam sauna sessions. Sweating allows BPA to be released from the body through the skin.

Herbicides

Test Name	Current	Previous	75th	Result	95th	Reference
Glyphosate (ug/g)	9.29		1.65		7.6	≤7.6

BACKGROUND

Glyphosate is a broad-spectrum systemic herbicide and crop desiccant widely utilized to eliminate weeds, particularly annual broadleaf weeds and competing grasses in crop fields.

ASSOCIATED RISK

This exposure may have implications for liver health, metabolic disorders, and adverse effects on the nervous system. Glyphosate exposure during early life stages can disrupt normal cell development, impacting critical signalling pathways and causing issues like altered differentiation, neuronal growth, migration, and myelination (2,3).

POSSIBLE SOURCES

Glyphosate exposure can stem from various sources, including occupational use, residential proximity to farmland, living with occupational users, dietary consumption of food with residues, ingesting contaminated water, and secondary exposure through contact with treated areas.

DETOX SUGGESTIONS

Citrus pectin, alginates from kelp, and glycine act as powerful detoxifiers. Citrus pectin clears environmental toxins and cholesterol, alginates protect against herbicides and remove toxins, while glycine aids in glutathione production, preventing glyphosate storage. Gingko biloba serves as a potent protector against glyphosate toxicity (20-22).

Mitochondrial Marker

No markers are outside the normal reference range

Other Markers

No markers are outside the normal reference range

Parabens

No markers are outside the normal reference range

Pesticides

No markers are outside the normal reference range

Phthalates

No markers are outside the normal reference range

Volatile organic compounds

No markers are outside the normal reference range

Creatinine

Test Name	Current	Previous	Result	Reference
Urine Creatinine (mg/mL)	1.65		<div><div></div></div>	0.25-2.16

Environmental Toxins

Environmental phenols						
Test Name	Current	Previous	Result		Reference	
			75th	95th		
4-Nonylphenol (ug/g)	0.38		<div><div></div><div></div><div></div></div> <div>0.422.06</div>		≤2.06	
Bisphenol A (BPA)^ (ug/g)	2.69		<div><div></div><div></div><div></div></div> <div>2.125.09</div>		≤5.09	
Triclosan (TCS)^ (ug/g)	20.77		<div><div></div><div></div><div></div></div> <div>29.9358</div>		≤358	
Herbicides						
Test Name	Current	Previous	Result		Reference	
			75th	95th		
2,4-Dichlorophenoxyacetic Acid (2,4-D)^ (ug/g)	0.06		<div><div></div><div></div><div></div></div> <div>0.51.55</div>		≤1.55	
Atrazine ^ (ug/g)	0.01		<div><div></div><div></div><div></div></div> <div>0.020.05</div>		≤0.05	
Atrazine mercapturate^ (ug/g)	0.01		<div><div></div><div></div><div></div></div> <div>0.020.05</div>		≤0.05	
Glyphosate (ug/g)	9.29		<div><div></div><div></div><div></div></div> <div>1.657.6</div>		≤7.6	
Mitochondrial Marker						
Test Name	Current	Previous	Result		Reference	
			75th	95th		
Tiglylglycine (TG) (ug/g)	0.02		<div><div></div><div></div><div></div></div> <div>0.093.24</div>		≤3.24	
Other Markers						
Test Name	Current	Previous	Result		Reference	
			75th	95th		
Diphenyl Phosphate (DPP) (ug/g)	0.53		<div><div></div><div></div><div></div></div> <div>1.13.7</div>		≤3.7	
N-acetyl-S-(2-carbamoyl-ethyl)-cysteine^ (ug/g)	0.26		<div><div></div><div></div><div></div></div> <div>82199</div>		≤199	
Perchlorate (PERC)^ (ug/g)	0.02		<div><div></div><div></div><div></div></div> <div>4.8910.7</div>		≤10.7	
Parabens						
Test Name	Current	Previous	Result		Reference	
			75th	95th		
Butylparaben^ (ug/g)	0.20		<div><div></div><div></div><div></div></div> <div>0.254.39</div>		≤4.39	
Ethylparaben ^ (ug/g)	0.02		<div><div></div><div></div><div></div></div> <div>5.4199.3</div>		≤99.3	
Methylparaben^ (ug/g)	17.95		<div><div></div><div></div><div></div></div> <div>180653</div>		≤653	
Propylparaben^ (ug/g)	23.88		<div><div></div><div></div><div></div></div> <div>36.7222</div>		≤222	

Environmental Toxins

Pesticides						
Test Name	Current	Previous	Result		Reference	
			75th	95th		
2,2-bis(4-Chlorophenyl) acetic acid (DDA) (ug/g)	6.70		<div><div></div><div></div><div></div></div> 7.919		≤19	
3-Phenoxybenzoic Acid (3PBA)^ (ug/g)	0.31		<div><div></div><div></div><div></div></div> 1.015.44		≤5.44	
Diethyl phosphate (DEP)^ (ug/g)	2.19		<div><div></div><div></div><div></div></div> 3.215.7		≤15.7	
Diethyldithiophosphate (DEDTP)^ (ug/g)	0.05		<div><div></div><div></div><div></div></div> 0.170.3		≤0.3	
Diethylthiophosphate (DETP)^ (ug/g)	0.57		<div><div></div><div></div><div></div></div> 1.243.92		≤3.92	
Dimethyl phosphate (DMP)^ (ug/g)	4.90		<div><div></div><div></div><div></div></div> 9.133.6		≤33.6	
Dimethyldithiophosphate (DMDTP)^ (ug/g)	0.30		<div><div></div><div></div><div></div></div> 0.676.12		≤6.12	
Dimethylthiophosphate (DMTP)^ (ug/g)	4.05		<div><div></div><div></div><div></div></div> 5.9133.7		≤33.7	
Phthalates						
Test Name	Current	Previous	Result		Reference	
			75th	95th		
Mono-(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP)^ (ug/g)	0.10		<div><div></div><div></div><div></div></div> 14.137.7		≤37.7	
Mono-(2-ethyl-5-oxohexyl) phthalate (MEOHP)^ (ug/g)	0.19		<div><div></div><div></div><div></div></div> 8.9923.4		≤23.4	
Mono-2-ethylhexyl phthalate (MEHP)^ (ug/g)	0.41		<div><div></div><div></div><div></div></div> 2.738.47		≤8.47	
Mono-ethyl phthalate (MEtP)^ (ug/g)	2.58		<div><div></div><div></div><div></div></div> 94.2541		≤541	
Volatile organic compounds						
Test Name	Current	Previous	Result		Reference	
			75th	95th		
2-Hydroxyethyl Mercapturic Acid (HEMA)^ (ug/g)	0.36		<div><div></div><div></div><div></div></div> 1.74.75		≤4.75	
2-Hydroxyisobutyric Acid (2HIB) (ug/g)	19.19		<div><div></div><div></div><div></div></div> 795.931215.72		≤1215.72	
2-Methylhippuric Acid (2MHA)^ (ug/g)	2.97		<div><div></div><div></div><div></div></div> 77.9248		≤248	
3-Methylhippuric Acid (3MHA) (ug/g)	2.43		<div><div></div><div></div><div></div></div> 64.8612.83		≤612.83	
4-Methylhippuric Acid (4MHA) (ug/g)	2.43		<div><div></div><div></div><div></div></div> 65.51752.72		≤752.72	
N-Acetyl (2-Cyanoethyl) Cysteine (NACE)^ (ug/g)	2.68		<div><div></div><div></div><div></div></div> 5.28256		≤256	
N-Acetyl (2-Hydroxypropyl) Cysteine (NAHP)^ (ug/g)	0.08		<div><div></div><div></div><div></div></div> 101403		≤403	

Environmental Toxins

Volatile organic compounds					
Test Name	Current	Previous	Result		Reference
			75th	95th	
N-Acetyl (3,4-Dihydroxybutyl) Cysteine^ (ug/g)	0.57		<div><div></div></div> 374	<div><div></div></div> 583	≤583
N-Acetyl (Propyl) Cysteine (NAPR)^ (ug/g)	0.03		<div><div></div></div> 11.3	<div><div></div></div> 46.1	≤46.1
N-acetyl phenyl cysteine (NAP)^ (ug/g)	0.78		<div><div></div></div> 1.29	<div><div></div></div> 3.03	≤3.03
Phenyl glyoxylic Acid (PGO)^ (ug/g)	5.77		<div><div></div></div> 285	<div><div></div></div> 518	≤518