

Toxic & Essential Elements; Hair

TOXIC METALS

		RESULT µg/g	REFERENCE INTERVAL	PERCENTILE	
				68 th	95 th
Aluminum (Al)	1.3	< 8.0			
Antimony (Sb)	< 0.01	< 0.066			
Arsenic (As)	0.046	< 0.060			
Barium (Ba)	0.05	< 1.5			
Beryllium (Be)	< 0.01	< 0.020			
Bismuth (Bi)	0.059	< 2.0			
Cadmium (Cd)	< 0.009	< 0.070			
Lead (Pb)	0.02	< 0.80			
Mercury (Hg)	0.28	< 0.40			
Platinum (Pt)	< 0.003	< 0.005			
Thallium (Tl)	< 0.001	< 0.002			
Thorium (Th)	< 0.001	< 0.002			
Uranium (U)	0.003	< 0.060			
Nickel (Ni)	< 0.01	< 0.30			
Silver (Ag)	0.01	< 0.18			
Tin (Sn)	0.03	< 0.30			
Titanium (Ti)	0.25	< 0.70			
Total Toxic Representation					

ESSENTIAL AND OTHER ELEMENTS

		RESULT µg/g	REFERENCE INTERVAL	PERCENTILE				
				2.5 th	16 th	50 th	84 th	97.5 th
Calcium (Ca)	182	250 - 800						
Magnesium (Mg)	18	25 - 90						
Sodium (Na)	21	18 - 180						
Potassium (K)	9	10 - 90						
Copper (Cu)	11	11 - 37						
Zinc (Zn)	170	120 - 220						
Manganese (Mn)	0.05	0.08 - 0.60						
Chromium (Cr)	0.45	0.40 - 0.65						
Vanadium (V)	0.027	0.025 - 0.10						
Molybdenum (Mo)	0.038	0.030 - 0.090						
Boron (B)	0.55	0.30 - 1.7						
Iodine (I)	0.24	0.25 - 1.3						
Lithium (Li)	< 0.004	0.007 - 0.020						
Phosphorus (P)	157	150 - 220						
Selenium (Se)	0.92	0.70 - 1.1						
Strontium (Sr)	0.10	0.37 - 3.6						
Sulfur (S)	45900	44000 - 51000						
Cobalt (Co)	0.003	0.005 - 0.035						
Iron (Fe)	4.5	7.0 - 16						
Germanium (Ge)	0.031	0.030 - 0.040						
Rubidium (Rb)	0.009	0.008 - 0.080						
Zirconium (Zr)	0.087	0.030 - 0.40						

SPECIMEN DATA

COMMENTS:

Date Collected: Sample Size: 0.197 g
 Date Received: 11/7/2011 Sample Type: Head
 Date Completed: 11/9/2011 Hair Color: Brown
 Methodology: ICP/MS Treatment:
 Shampoo: Rainbow

RATIOS

ELEMENTS	RATIOS	RANGE
Ca/Mg	10.1	4 - 30
Ca/P	1.16	1 - 12
Na/K	2.33	0.5 - 10
Zn/Cu	15.5	4 - 20
Zn/Cd	> 999	> 800



PATIENT: Hair Test 766 Follow-up test
 SEX: Female
 AGE: 7

Toxic & Essential Elements; Hair

TOXIC METALS			
	RESULT µg/g	REFERENCE INTERVAL	PERCENTILE 68 th 95 th
Aluminum (Al)	1.8	< 8.0	
Antimony (Sb)	< 0.01	< 0.066	
Arsenic (As)	0.035	< 0.060	
Barium (Ba)	< 0.04	< 1.5	
Beryllium (Be)	< 0.01	< 0.020	
Bismuth (Bi)	0.013	< 2.0	
Cadmium (Cd)	< 0.009	< 0.070	
Lead (Pb)	0.03	< 0.80	
Mercury (Hg)	< 0.03	< 0.40	
Platinum (Pt)	< 0.003	< 0.005	
Thallium (Tl)	< 0.001	< 0.002	
Thorium (Th)	< 0.001	< 0.002	
Uranium (U)	0.003	< 0.060	
Nickel (Ni)	0.02	< 0.30	
Silver (Ag)	0.01	< 0.18	
Tin (Sn)	0.04	< 0.30	
Titanium (Ti)	0.27	< 0.70	
Total Toxic Representation			

ESSENTIAL AND OTHER ELEMENTS					
	RESULT µg/g	REFERENCE INTERVAL	PERCENTILE 2.5 th 16 th 50 th 84 th 97.5 th		
Calcium (Ca)	237	250- 800			
Magnesium (Mg)	24	25- 90			
Sodium (Na)	10	18- 180			
Potassium (K)	3	10- 90			
Copper (Cu)	11	11- 37			
Zinc (Zn)	200	120- 220			
Manganese (Mn)	0.05	0.08- 0.60			
Chromium (Cr)	0.32	0.40- 0.65			
Vanadium (V)	0.031	0.025- 0.10			
Molybdenum (Mo)	0.047	0.030- 0.090			
Boron (B)	0.51	0.30- 1.7			
Iodine (I)	0.80	0.25- 1.3			
Lithium (Li)	< 0.004	0.007- 0.020			
Phosphorus (P)	149	150- 220			
Selenium (Se)	1.1	0.70- 1.1			
Strontium (Sr)	0.09	0.37- 3.6			
Sulfur (S)	49600	44000- 51000			
Cobalt (Co)	0.003	0.005- 0.035			
Iron (Fe)	5.1	7.0- 16			
Germanium (Ge)	0.027	0.030- 0.040			
Rubidium (Rb)	0.006	0.008- 0.080			
Zirconium (Zr)	0.096	0.030- 0.40			

SPECIMEN DATA		RATIOS	
COMMENTS:		ELEMENTS	RATIOS
Date Collected: 04/08/2013	Sample Size: 0.195 g	Ca/Mg	9.88
Date Received: 04/11/2013	Sample Type: Head	Ca/P	1.59
Date Completed: 04/12/2013	Hair Color: Brown	Na/K	3.33
Methodology: ICP/MS	Treatment:	Zn/Cu	18.2
	Shampoo: Rainbow Kids	Zn/Cd	> 999
		RANGE	
		4- 30	
		1- 12	
		0.5- 10	
		4- 20	
		> 800	



Hair Test 766 follow up third test in series

SEX: Female

AGE: 8

Toxic & Essential Elements; Hair

TOXIC METALS			
	RESULT µg/g	REFERENCE INTERVAL	PERCENTILE 68 th 95 th
Aluminum (Al)	3.6	< 8.0	
Antimony (Sb)	0.026	< 0.066	
Arsenic (As)	0.036	< 0.060	
Barium (Ba)	0.05	< 1.5	
Beryllium (Be)	< 0.01	< 0.020	
Bismuth (Bi)	0.027	< 2.0	
Cadmium (Cd)	0.049	< 0.070	
Lead (Pb)	0.03	< 0.80	
Mercury (Hg)	< 0.03	< 0.40	
Platinum (Pt)	< 0.003	< 0.005	
Thallium (Tl)	< 0.001	< 0.002	
Thorium (Th)	< 0.001	< 0.002	
Uranium (U)	0.006	< 0.060	
Nickel (Ni)	0.02	< 0.30	
Silver (Ag)	< 0.006	< 0.18	
Tin (Sn)	0.03	< 0.30	
Titanium (Ti)	0.29	< 0.70	
Total Toxic Representation			

ESSENTIAL AND OTHER ELEMENTS			
	RESULT µg/g	REFERENCE INTERVAL	PERCENTILE 2.5 th 16 th 50 th 84 th 97.5 th
Calcium (Ca)	239	250- 800	
Magnesium (Mg)	18	25- 90	
Sodium (Na)	88	18- 180	
Potassium (K)	34	10- 90	
Copper (Cu)	11	11- 37	
Zinc (Zn)	180	120- 220	
Manganese (Mn)	0.08	0.08- 0.60	
Chromium (Cr)	0.35	0.40- 0.65	
Vanadium (V)	0.038	0.025- 0.10	
Molybdenum (Mo)	0.032	0.030- 0.090	
Boron (B)	1.5	0.30- 1.7	
Iodine (I)	0.25	0.25- 1.3	
Lithium (Li)	< 0.004	0.007- 0.020	
Phosphorus (P)	172	150- 220	
Selenium (Se)	0.91	0.70- 1.1	
Strontium (Sr)	0.07	0.37- 3.6	
Sulfur (S)	46600	44000- 51000	
Cobalt (Co)	0.004	0.005- 0.035	
Iron (Fe)	8.0	7.0- 16	
Germanium (Ge)	0.034	0.030- 0.040	
Rubidium (Rb)	0.039	0.008- 0.080	
Zirconium (Zr)	0.077	0.030- 0.40	

SPECIMEN DATA		RATIOS	
COMMENTS:		ELEMENTS	RATIOS
Date Collected: 05/22/2014	Sample Size: 0.198 g	Ca/Mg	13.3
Date Received: 05/27/2014	Sample Type: Head	Ca/P	1.39
Date Completed: 05/29/2014	Hair Color: Brown	Na/K	2.59
Methodology: ICP/MS	Treatment:	Zn/Cu	16.4
	Shampoo: Biolage	Zn/Cd	> 999
		RANGE	
			4- 30
			1- 12
			0.5- 10
			4- 20
			> 800



HAIR TEST:766 Follow-up
SEX: Female
AGE: 9

Toxic & Essential Elements; Hair

TOXIC METALS			
	RESULT µg/g	REFERENCE INTERVAL	PERCENTILE 68 th 95 th
Aluminum (Al)	3.2	< 8.0	
Antimony (Sb)	< 0.01	< 0.066	
Arsenic (As)	0.025	< 0.060	
Barium (Ba)	0.17	< 1.5	
Beryllium (Be)	< 0.01	< 0.020	
Bismuth (Bi)	0.018	< 2.0	
Cadmium (Cd)	0.009	< 0.070	
Lead (Pb)	0.07	< 0.80	
Mercury (Hg)	0.03	< 0.40	
Platinum (Pt)	< 0.003	< 0.005	
Thallium (Tl)	< 0.001	< 0.002	
Thorium (Th)	< 0.001	< 0.002	
Uranium (U)	0.018	< 0.060	
Nickel (Ni)	0.06	< 0.30	
Silver (Ag)	0.01	< 0.18	
Tin (Sn)	0.02	< 0.30	
Titanium (Ti)	0.31	< 0.70	
Total Toxic Representation			

ESSENTIAL AND OTHER ELEMENTS					
	RESULT µg/g	REFERENCE INTERVAL	PERCENTILE 2.5 th 16 th 50 th 84 th 97.5 th		
Calcium (Ca)	428	250- 800			
Magnesium (Mg)	18	25- 90			
Sodium (Na)	140	18- 180			
Potassium (K)	88	10- 90			
Copper (Cu)	54	11- 37			
Zinc (Zn)	190	120- 220			
Manganese (Mn)	0.07	0.08- 0.60			
Chromium (Cr)	0.39	0.40- 0.65			
Vanadium (V)	0.041	0.025- 0.10			
Molybdenum (Mo)	0.037	0.030- 0.090			
Boron (B)	0.34	0.30- 1.7			
Iodine (I)	0.21	0.25- 1.3			
Lithium (Li)	< 0.004	0.007- 0.020			
Phosphorus (P)	145	150- 220			
Selenium (Se)	0.93	0.70- 1.1			
Strontium (Sr)	0.70	0.37- 3.6			
Sulfur (S)	46200	44000- 51000			
Cobalt (Co)	0.003	0.005- 0.035			
Iron (Fe)	5.7	7.0- 16			
Germanium (Ge)	0.031	0.030- 0.040			
Rubidium (Rb)	0.10	0.008- 0.080			
Zirconium (Zr)	0.028	0.030- 0.40			

SPECIMEN DATA		RATIOS		
COMMENTS:		ELEMENTS	RATIOS	RANGE
Date Collected: 08/30/2015	Sample Size: 0.198 g	Ca/Mg	23.8	4- 30
Date Received: 09/08/2015	Sample Type: Head	Ca/P	2.95	1- 12
Date Completed: 09/13/2015	Hair Color: Brown	Na/K	1.59	0.5- 10
Methodology: ICP/MS	Treatment:	Zn/Cu	3.52	4- 20
	Shampoo: Redken	Zn/Cd	> 999	> 800



HAIR TEST: 766 - follow-up
 SEX: Female
 AGE: 10

Toxic & Essential Elements; Hair

TOXIC METALS			
	RESULT µg/g	REFERENCE INTERVAL	PERCENTILE 68 th 95 th
Aluminum (Al)	1.6	< 8.0	
Antimony (Sb)	< 0.01	< 0.066	
Arsenic (As)	0.029	< 0.060	
Barium (Ba)	< 0.04	< 1.5	
Beryllium (Be)	< 0.01	< 0.020	
Bismuth (Bi)	< 0.002	< 2.0	
Cadmium (Cd)	< 0.009	< 0.070	
Lead (Pb)	0.02	< 0.80	
Mercury (Hg)	< 0.03	< 0.40	
Platinum (Pt)	< 0.003	< 0.005	
Thallium (Tl)	< 0.001	< 0.002	
Thorium (Th)	< 0.001	< 0.002	
Uranium (U)	0.001	< 0.060	
Nickel (Ni)	0.07	< 0.30	
Silver (Ag)	< 0.006	< 0.18	
Tin (Sn)	< 0.02	< 0.30	
Titanium (Ti)	0.36	< 0.70	
Total Toxic Representation			

ESSENTIAL AND OTHER ELEMENTS					
	RESULT µg/g	REFERENCE INTERVAL	PERCENTILE 2.5 th 16 th 50 th 84 th 97.5 th		
Calcium (Ca)	249	250- 800			
Magnesium (Mg)	21	25- 90			
Sodium (Na)	34	18- 180			
Potassium (K)	22	10- 90			
Copper (Cu)	10	11- 37			
Zinc (Zn)	240	120- 220			
Manganese (Mn)	0.05	0.08- 0.60			
Chromium (Cr)	0.46	0.40- 0.65			
Vanadium (V)	0.060	0.025- 0.10			
Molybdenum (Mo)	0.026	0.030- 0.090			
Boron (B)	0.36	0.30- 1.7			
Iodine (I)	0.22	0.25- 1.3			
Lithium (Li)	0.007	0.007- 0.020			
Phosphorus (P)	153	150- 220			
Selenium (Se)	0.91	0.70- 1.1			
Strontium (Sr)	0.07	0.37- 3.6			
Sulfur (S)	48000	44000- 51000			
Cobalt (Co)	< 0.002	0.005- 0.035			
Iron (Fe)	6.0	7.0- 16			
Germanium (Ge)	0.037	0.030- 0.040			
Rubidium (Rb)	0.023	0.008- 0.080			
Zirconium (Zr)	0.021	0.030- 0.40			

SPECIMEN DATA		RATIOS	
COMMENTS:		ELEMENTS	RATIOS
Date Collected: 06/05/2016	Sample Size: 0.195 g	Ca/Mg	11.9
Date Received: 06/10/2016	Sample Type: Head	Ca/P	1.63
Date Completed: 06/11/2016	Hair Color: Brown	Na/K	1.55
Methodology: ICP/MS	Treatment:	Zn/Cu	24
	Shampoo: Hs	Zn/Cd	> 999
		RANGE	
			4- 30
			1- 12
			0.5- 10
			4- 20
			> 800

Health history for hair test 766

1) What are your current symptoms and health history? 7 yr old girl, with school diagnosed Autism upon beginning Kindergarten last year. Improving steadily since very first round of AC Chelation.

History of food intolerance, hives, expressive speech delay, echolalia, toe walking. At time of first hair test, Spectracell WBC test showed lowish Zinc, Glutathione, Vitamin C. Her Vitamin B12 was deficient. On Feingold diet.

2) Dental history (wisdom teeth removed? First root canal placed? Braces? First amalgam etc...) No amalgams. Several composites. Had first cavity on 1st birthday.

3) What dental work do you currently have in place? What part of the dental cleanup have you

completed? Same as question #2

4) What dentistry did your mother have at any time before or during pregnancy? 6 amalgams, all 15+ yrs old.

5) What vaccinations have you had and when (including flu and especially travel shots)?

All childhood vaccinations, including yearly flu shots. Mom had all shots/flu shots as well.

6) Supplements and medications (including dosages) taken at time of hair test, or for the 3-6 months before the sample was taken. Before first hair test, none really except Epsom salt baths.

At time of second hair test, she had completed 63 rounds of AC Chelation, nearly all ALA only, and basic supplements. Zinc, C, E, Mg, A, and an occasional children's multi.

7) Other information you feel may be relevant? Before first hair test, tuna fish sandwiches were a favorite food. We stopped eating all fish at that time.

8) What is your location - city & country (so that we can learn where certain toxins are more prevalent). First 3 months in Arkansas, 11 months in Kansas, 3 years in Texas, 3 years in Falls Church, Virginia