

MineralCheck



9 Toxins / 11 Essential Minerals

Age: 58
Sex: M
Master Number: 0001
Order Number:
Completed: May 10, 2011
Received: May 06, 2011
Collected: April 29, 2011

HAIR TEST 477

1
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RESULTS OF YOUR HAIR ANALYSIS:

About This Report

Care should be used in the evaluation of your MineralCheck elemental analysis results. Hair treatments or other external contaminants may falsely elevate reported levels of an element.

Toxic Elements

	Inside Range	Outside Range	Ref. Range (mcg/g)
Aluminum		>23.1	<=17.3
Antimony	0.015		<=0.016
Arsenic	0.066		<=0.080
Bismuth		0.316	<=0.178
Cadmium		0.096	<=0.022
Lead		1.466	<=0.700
Mercury	0.75		<=1.32
Nickel		0.73	<=0.55
Tin		0.602	<=0.149

Nutrient Elements

	Inside Range	Outside Range	Ref. Range (mcg/g)
Calcium*	638		192-1,588
Chromium	0.20		0.01-1.58
Cobalt		0.278	0.001-0.129
Copper		265	8-136
Magnesium*		145	11-122
Manganese	1.66		0.04-1.93
Molybdenum	0.04		0.01-1.24
Strontium	4.31		0.01-4.40
Sulfur	49,954		41,781-60,894
Vanadium	0.038		0.003-0.108
Zinc*	>231		119-245

This screen was developed and its performance characteristics determined by Genova Diagnostics, Inc. It has not been cleared by the U.S. Food and Drug Administration.

Reference ranges are derived from a healthy adult population without hair treatments such as perms, dyes, or bleach.

*High levels of these elements may reflect disordered metabolism or maldistribution in the body. In such cases, there may be a loss of these minerals from the organs and tissues where they are normally stored or utilized.

All values expressed in mcg/g (micrograms per gram).

Results and information are for personal use only, and are not intended to diagnose, cure, mitigate, treat, or prevent disease or other conditions, and are not intended to provide a determination or assessment of the state of health. Many factors influence mineral and toxic status and this product evaluates only twenty of these factors. Always consult with a licensed health care professional to interpret screen results and/or make health care decisions.

BodyBalance

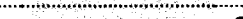
828-285-2235 · www.bodybalance.com · email: bodybalance@gsdl.com

EBMN3 BBRMS 40 Rev 3
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POTENTIALLY TOXIC ELEMENTS

TOXIC ELEMENTS	RESULT µg/g	REFERENCE RANGE	PERCENTILE		
			68 th	95 th	
Aluminum	19	< 12			
Antimony	0.020	< 0.080			
Arsenic	0.095	< 0.12			
Barium	0.36	< 1.5			
Beryllium	< 0.01	< 0.020			
Bismuth	0.33	< 2.0			
Cadmium	0.060	< 0.065			
Lead	1.7	< 1.5			
Mercury	0.73	< 0.80			
Platinum	< 0.003	< 0.005			
Thallium	< 0.001	< 0.002			
Thorium	< 0.001	< 0.002			
Uranium	0.041	< 0.060			
Nickel	0.72	< 0.40			
Silver	0.06	< 0.10			
Tin	0.61	< 0.30			
Titanium	0.39	< 0.70			
Total Toxic Representation					

ESSENTIAL AND OTHER ELEMENTS

ELEMENTS	RESULT µg/g	REFERENCE RANGE	PERCENTILE				
			2.5 th	16 th	50 th	84 th	97.5 th
Calcium	172	375- 1100					
Magnesium	22	40- 140					
Sodium	140	60- 400					
Potassium	69	28- 160					
Copper	84	11- 32					
Zinc	150	120- 200					
Manganese	0.34	0.15- 0.65					
Chromium	0.39	0.40- 0.70					
Vanadium	0.020	0.018- 0.065					
Molybdenum	0.062	0.040- 0.080					
Boron	1.7	0.40- 2.5					
Iodine	0.23	0.25- 1.8					
Lithium	0.004	0.008- 0.030					
Phosphorus	214	200- 300					
Selenium	1.5	0.80- 1.3					
Strontium	0.43	1.0- 6.0					
Sulfur	43800	41000- 47000					
Cobalt	0.060	0.006- 0.035					
Iron	14	7.0- 16					
Germanium	0.029	0.030- 0.040					
Rubidium	0.070	0.030- 0.25					
Zirconium	0.019	0.040- 1.0					

SPECIMEN DATA

RATIOS

COMMENTS:

Date Collected: 6/17/2011

Sample Size: 0.2 g

Date Received: 6/25/2011

Sample Type: Pubic

Date Completed: 6/28/2011

Hair Color: Brown

Client Reference:

Treatment:

Methodology: ICP-MS

Shampoo:

ELEMENTS

RATIOS

EXPECTED
RANGE

Ca/Mg

7.82

4- 30

Ca/P

0.804

0.8- 8

Na/K

2.03

0.5- 10

Zn/Cu

1.79

4- 20

Zn/Cd

> 999

> 800

V010.08

Toxic & Essential Elements; Hair

TOXIC METALS			
		RESULT µg/g	REFERENCE INTERVAL
			PERCENTILE 68 th 95 th
Aluminum	(Al)	20	< 7.0
Antimony	(Sb)	0.016	< 0.066
Arsenic	(As)	0.047	< 0.080
Barium	(Ba)	0.56	< 1.0
Beryllium	(Be)	< 0.01	< 0.020
Bismuth	(Bi)	0.45	< 2.0
Cadmium	(Cd)	0.069	< 0.055
Lead	(Pb)	1.5	< 0.90
Mercury	(Hg)	0.61	< 0.80
Platinum	(Pt)	< 0.003	< 0.005
Thallium	(Tl)	< 0.001	< 0.002
Thorium	(Th)	< 0.001	< 0.002
Uranium	(U)	0.043	< 0.060
Nickel	(Ni)	0.18	< 0.20
Silver	(Ag)	0.11	< 0.08
Tin	(Sn)	0.28	< 0.30
Titanium	(Ti)	0.26	< 0.60
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)	420	200 - 750
Magnesium	(Mg)	370	25 - 75
Sodium	(Na)	75	20 - 180
Potassium	(K)	87	9 - 80
Copper	(Cu)	160	11 - 30
Zinc	(Zn)	240	130 - 200
Manganese	(Mn)	0.47	0.08 - 0.50
Chromium	(Cr)	0.46	0.40 - 0.70
Vanadium	(V)	0.022	0.018 - 0.065
Molybdenum	(Mo)	0.053	0.025 - 0.060
Boron	(B)	7.9	0.40 - 3.0
Iodine	(I)	4.8	0.25 - 1.8
Lithium	(Li)	0.18	0.007 - 0.020
Phosphorus	(P)	156	150 - 220
Selenium	(Se)	1.2	0.70 - 1.2
Strontium	(Sr)	0.94	0.30 - 3.5
Sulfur	(S)	47000	44000 - 50000
Cobalt	(Co)	0.067	0.004 - 0.020
Iron	(Fe)	8.1	7.0 - 16
Germanium	(Ge)	0.028	0.030 - 0.040
Rubidium	(Rb)	0.12	0.011 - 0.12
Zirconium	(Zr)	0.18	0.020 - 0.44

SPECIMEN DATA		RATIOS		
COMMENTS:		ELEMENTS	RATIOS	RANGE
Date Collected: 03/18/2013	Sample Size: 0.198 g	Ca/Mg	1.14	4 - 30
Date Received: 07/01/2013	Sample Type: Head	Ca/P	2.69	0.8 - 8
Date Completed: 07/05/2013	Hair Color: Brown	Na/K	0.862	0.5 - 10
Methodology: ICP/MS	Treatment:	Zn/Cu	1.5	4 - 20
	Shampoo: Body Wash	Zn/Cd	> 999	> 800



PATIENT: Number 477 - follow-up test
SEX: Male
AGE: 61

Toxic & Essential Elements; Hair

TOXIC METALS			
	RESULT µg/g	REFERENCE INTERVAL	PERCENTILE 68 th 95 th
Aluminum (Al)	6.5	< 7.0	
Antimony (Sb)	0.029	< 0.066	
Arsenic (As)	0.030	< 0.080	
Barium (Ba)	0.24	< 1.0	
Beryllium (Be)	< 0.01	< 0.020	
Bismuth (Bi)	0.030	< 2.0	
Cadmium (Cd)	0.027	< 0.065	
Lead (Pb)	0.83	< 0.80	
Mercury (Hg)	0.53	< 0.80	
Platinum (Pt)	0.025	< 0.005	
Thallium (Tl)	< 0.001	< 0.002	
Thorium (Th)	< 0.001	< 0.002	
Uranium (U)	0.074	< 0.060	
Nickel (Ni)	0.16	< 0.20	
Silver (Ag)	0.09	< 0.08	
Tin (Sn)	0.81	< 0.30	
Titanium (Ti)	0.26	< 0.60	
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)	111	200- 750	
Magnesium (Mg)	260	25- 75	
Sodium (Na)	47	20- 180	
Potassium (K)	16	9- 80	
Copper (Cu)	54	11- 30	
Zinc (Zn)	120	130- 200	
Manganese (Mn)	0.93	0.08- 0.50	
Chromium (Cr)	0.47	0.40- 0.70	
Vanadium (V)	0.054	0.018- 0.065	
Molybdenum (Mo)	0.10	0.025- 0.060	
Boron (B)	2.1	0.40- 3.0	
Iodine (I)	2.0	0.25- 1.8	
Lithium (Li)	0.005	0.007- 0.020	
Phosphorus (P)	169	150- 220	
Selenium (Se)	1.2	0.70- 1.2	
Strontium (Sr)	0.32	0.30- 3.5	
Sulfur (S)	46500	44000- 50000	
Cobalt (Co)	0.031	0.004- 0.020	
Iron (Fe)	8.0	7.0- 16	
Germanium (Ge)	0.030	0.030- 0.040	
Rubidium (Rb)	0.018	0.011- 0.12	
Zirconium (Zr)	0.064	0.020- 0.44	

SPECIMEN DATA		RATIOS		
COMMENTS: Results checked.		ELEMENTS	RATIOS	RANGE
Date Collected: 11/21/2013		Ca/Mg	0.427	4- 30
Date Received: 12/21/2013		Ca/P	0.657	0.8- 8
Date Completed: 12/31/2013		Na/K	2.94	0.5- 10
Methodology: ICP/MS		Zn/Cu	2.22	4- 20
Sample Size: 0.196 g		Zn/Cd	> 999	> 800
Sample Type: Head				
Hair Color: Brown				
Treatment:				
Shampoo: Body Wash				

Toxic & Essential Elements; Hair

Palmetto & Prostate RX
And Bone Compound as needed

TOXIC METALS				PERCENTILE	
		RESULT µg/g	REFERENCE INTERVAL	68 th	95 th
Aluminum (Al)		8.2	< 7.0		
Antimony (Sb)		0.036	< 0.066		
Arsenic (As)		0.018	< 0.080		
Barium (Ba)		0.73	< 1.0		
Beryllium (Be)		< 0.01	< 0.020		
Bismuth (Bi)		0.013	< 2.0		
Cadmium (Cd)		0.021	< 0.065		
Lead (Pb)		0.57	< 0.80		
Mercury (Hg)		0.46	< 0.80		
Platinum (Pt)		0.022	< 0.005		
Thallium (Tl)		< 0.001	< 0.002		
Thorium (Th)		< 0.001	< 0.002		
Uranium (U)		0.12	< 0.060		
Nickel (Ni)		0.14	< 0.20		
Silver (Ag)		0.12	< 0.08		
Tin (Sn)		0.34	< 0.30		
Titanium (Ti)		0.42	< 0.60		
Total Toxic Representation					

ESSENTIAL AND OTHER ELEMENTS				PERCENTILE				
		RESULT µg/g	REFERENCE INTERVAL	2.5 th	16 th	50 th	84 th	97.5 th
Calcium (Ca)		396	200- 750					
Magnesium (Mg)		290	25- 75					
Sodium (Na)		27	20- 180					
Potassium (K)		16	9- 80					
Copper (Cu)		62	11- 30					
Zinc (Zn)		120	130- 200					
Manganese (Mn)		0.44	0.08- 0.50					
Chromium (Cr)		0.46	0.40- 0.70					
Vanadium (V)		0.026	0.018- 0.065					
Molybdenum (Mo)		0.12	0.025- 0.060					
Boron (B)		1.9	0.40- 3.0					
Iodine (I)		2.9	0.25- 1.8					
Lithium (Li)		< 0.004	0.007- 0.020					
Phosphorus (P)		171	150- 220					
Selenium (Se)		1.2	0.70- 1.2					
Strontium (Sr)		1.9	0.30- 3.5					
Sulfur (S)		45700	44000- 50000					
Cobalt (Co)		0.024	0.004- 0.020					
Iron (Fe)		9.7	7.0- 16					
Germanium (Ge)		0.036	0.030- 0.040					
Rubidium (Rb)		0.018	0.011- 0.12					
Zirconium (Zr)		0.11	0.020- 0.44					

SPECIMEN DATA		RATIOS		
COMMENTS: results checked		ELEMENTS	RATIOS	RANGE
Date Collected: 01/06/2015		Ca/Mg	1.37	4- 30
Date Received: 01/12/2015		Ca/P	2.32	0.8- 8
Date Completed: 01/16/2015		Na/K	1.69	0.5- 10
Methodology: ICP/MS		Zn/Cu	1.94	4- 20
Sample Size: 0.205 g		Zn/Cd	> 999	> 800
Sample Type: Head				
Hair Color: Brown				
Treatment:				
Shampoo: Suave				



SEX: Male
AGE: 62

Toxic & Essential Elements; Hair

Nice job on Iodine / Run regular HMT in future to be sure it stays in balance once more B2

TOXIC METALS				PERCENTILE
		RESULT µg/g	REFERENCE INTERVAL	68 th 95 th
Aluminum (Al)		7.5	< 7.0	
Antimony (Sb)		0.094	< 0.066	
Arsenic (As)		0.011	< 0.080	
Barium (Ba)		0.46	< 1.0	
Beryllium (Be)		< 0.01	< 0.020	
Bismuth (Bi)		0.017	< 2.0	
Cadmium (Cd)		0.013	< 0.065	
Lead (Pb)		0.35	< 0.80	
Mercury (Hg)		0.57	< 0.80	
Platinum (Pt)		0.024	< 0.005	
Thallium (Tl)		< 0.001	< 0.002	
Thorium (Th)		0.001	< 0.002	
Uranium (U)		0.045	< 0.060	
Nickel (Ni)		0.14	< 0.20	
Silver (Ag)		0.12	< 0.08	
Tin (Sn)		0.10	< 0.30	
Titanium (Ti)		0.51	< 0.60	
Total Toxic Representation				

ESSENTIAL AND OTHER ELEMENTS				PERCENTILE
		RESULT µg/g	REFERENCE INTERVAL	2.5 th 16 th 50 th 84 th 97.5 th
Calcium (Ca)		350	200- 750	
Magnesium (Mg)		780	25- 75	
Sodium (Na)		38	20- 180	
Potassium (K)		10	9- 80	
Copper (Cu)		44	11- 30	
Zinc (Zn)		170	130- 200	
Manganese (Mn)		0.38	0.08- 0.50	
Chromium (Cr)		0.46	0.40- 0.70	
Vanadium (V)		0.027	0.018- 0.065	
Molybdenum (Mo)		0.090	0.025- 0.060	
Boron (B)		1.2	0.40- 3.0	
Iodine (I)		1.4	0.25- 1.8	
Lithium (Li)		0.007	0.007- 0.020	
Phosphorus (P)		157	150- 220	
Selenium (Se)		1.3	0.70- 1.2	
Strontium (Sr)		0.72	0.30- 3.5	
Sulfur (S)		44700	44000- 50000	
Cobalt (Co)		0.025	0.004- 0.020	
Iron (Fe)		10	7.0- 16	
Germanium (Ge)		0.026	0.030- 0.040	
Rubidium (Rb)		0.016	0.011- 0.12	
Zirconium (Zr)		0.10	0.020- 0.44	

SPECIMEN DATA		RATIOS		
COMMENTS: results checked		ELEMENTS	RATIOS	RANGE
Date Collected: 05/02/2015		Ca/Mg	0.449	4- 30
Date Received: 05/13/2015		Ca/P	2.23	0.8- 8
Date Completed: 05/16/2015		Na/K	3.8	0.5- 10
Methodology: ICP/MS		Zn/Cu	3.86	4- 20
		Zn/Cd	> 999	> 800

low dose methyl B

As always, work with your Doctor.
With love & hope, Dr. Amy



FOLLOW-UP: September 2015

SEX: Male

AGE: 63

Toxic & Essential Elements; Hair

TOXIC METALS					
		RESULT μg/g	REFERENCE INTERVAL	PERCENTILE	
				68 th	95 th
Aluminum	(Al)	4.7	< 7.0		
Antimony	(Sb)	0.041	< 0.066		
Arsenic	(As)	0.015	< 0.080		
Barium	(Ba)	0.28	< 1.0		
Beryllium	(Be)	< 0.01	< 0.020		
Bismuth	(Bi)	0.012	< 2.0		
Cadmium	(Cd)	0.014	< 0.065		
Lead	(Pb)	0.31	< 0.80		
Mercury	(Hg)	0.42	< 0.80		
Platinum	(Pt)	0.015	< 0.005		
Thallium	(Tl)	< 0.001	< 0.002		
Thorium	(Th)	0.001	< 0.002		
Uranium	(U)	0.020	< 0.060		
Nickel	(Ni)	0.08	< 0.20		
Silver	(Ag)	0.07	< 0.08		
Tin	(Sn)	0.17	< 0.30		
Titanium	(Ti)	0.32	< 0.60		
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)	189	200 - 750					
Magnesium	(Mg)	310	25 - 75					
Sodium	(Na)	87	20 - 180					
Potassium	(K)	20	9 - 80					
Copper	(Cu)	28	11 - 30					
Zinc	(Zn)	150	130 - 200					
Manganese	(Mn)	0.66	0.08 - 0.50					
Chromium	(Cr)	0.40	0.40 - 0.70					
Vanadium	(V)	0.024	0.018 - 0.065					
Molybdenum	(Mo)	0.080	0.025 - 0.060					
Boron	(B)	3.5	0.40 - 3.0					
Iodine	(I)	2.7	0.25 - 1.8					
Lithium	(Li)	0.020	0.007 - 0.020					
Phosphorus	(P)	159	150 - 220					
Selenium	(Se)	1.1	0.70 - 1.2					
Strontium	(Sr)	0.46	0.30 - 3.5					
Sulfur	(S)	47000	44000 - 50000					
Cobalt	(Co)	0.011	0.004 - 0.020					
Iron	(Fe)	7.5	7.0 - 16					
Germanium	(Ge)	0.033	0.030 - 0.040					
Rubidium	(Rb)	0.020	0.011 - 0.12					
Zirconium	(Zr)	0.021	0.020 - 0.44					

SPECIMEN DATA		RATIOS		
COMMENTS: results checked		ELEMENTS	RATIOS	RANGE
Date Collected: 10/19/2015		Ca/Mg	0.61	4 - 30
Date Received: 10/26/2015		Ca/P	1.19	0.8 - 8
Date Completed: 11/03/2015		Na/K	4.35	0.5 - 10
Methodology: ICP/MS		Zn/Cu	5.36	4 - 20
Sample Size: 0.199 g		Zn/Cd	> 999	> 800
Sample Type: Head				
Hair Color: Brown				
Treatment:				
Shampoo: Wen				



FOLLOW-UP: March 2016

SEX: Male

AGE: 63

Toxic & Essential Elements; Hair

TOXIC METALS			
	RESULT μg/g	REFERENCE INTERVAL	PERCENTILE 68 th 95 th
Aluminum (Al)	3.4	< 7.0	
Antimony (Sb)	0.054	< 0.066	
Arsenic (As)	0.11	< 0.080	
Barium (Ba)	0.26	< 1.0	
Beryllium (Be)	< 0.01	< 0.020	
Bismuth (Bi)	0.004	< 2.0	
Cadmium (Cd)	0.010	< 0.065	
Lead (Pb)	0.23	< 0.80	
Mercury (Hg)	0.33	< 0.80	
Platinum (Pt)	0.010	< 0.005	
Thallium (Tl)	< 0.001	< 0.002	
Thorium (Th)	< 0.001	< 0.002	
Uranium (U)	0.024	< 0.060	
Nickel (Ni)	0.09	< 0.20	
Silver (Ag)	0.06	< 0.08	
Tin (Sn)	0.11	< 0.30	
Titanium (Ti)	0.30	< 0.60	
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)	224	200 - 750	
Magnesium (Mg)	760	25 - 75	
Sodium (Na)	39	20 - 180	
Potassium (K)	7	9 - 80	
Copper (Cu)	40	11 - 30	
Zinc (Zn)	180	130 - 200	
Manganese (Mn)	0.46	0.08 - 0.50	
Chromium (Cr)	0.45	0.40 - 0.70	
Vanadium (V)	0.020	0.018 - 0.065	
Molybdenum (Mo)	0.073	0.025 - 0.060	
Boron (B)	1.8	0.40 - 3.0	
Iodine (I)	2.8	0.25 - 1.8	
Lithium (Li)	0.009	0.007 - 0.020	
Phosphorus (P)	182	150 - 220	
Selenium (Se)	1.3	0.70 - 1.2	
Strontium (Sr)	0.51	0.30 - 3.5	
Sulfur (S)	48100	44000 - 50000	
Cobalt (Co)	0.013	0.004 - 0.020	
Iron (Fe)	7.6	7.0 - 16	
Germanium (Ge)	0.036	0.030 - 0.040	
Rubidium (Rb)	0.008	0.011 - 0.12	
Zirconium (Zr)	0.021	0.020 - 0.44	

SPECIMEN DATA		RATIOS		
COMMENTS: Results checked.		ELEMENTS	RATIOS	RANGE
Date Collected: 03/10/2016		Ca/Mg	0.295	4 - 30
Date Received: 04/11/2016		Ca/P	1.23	0.8 - 8
Date Completed: 04/19/2016		Na/K	5.57	0.5 - 10
Methodology: ICP/MS		Zn/Cu	4.5	4 - 20
Sample Size: 0.205 g		Zn/Cd	> 999	> 800
Sample Type: Head				
Hair Color: Brown				
Treatment:				
Shampoo: Wen				



HAIR TEST 477E - follow-up

SEX: Male

AGE: 64

Toxic & Essential Elements; Hair

TOXIC METALS					
		RESULT µg/g	REFERENCE INTERVAL	PERCENTILE	
				68 th	95 th
Aluminum	(Al)	7.0	< 7.0		
Antimony	(Sb)	0.029	< 0.066		
Arsenic	(As)	0.039	< 0.080		
Barium	(Ba)	0.12	< 1.0		
Beryllium	(Be)	< 0.01	< 0.020		
Bismuth	(Bi)	0.031	< 2.0		
Cadmium	(Cd)	< 0.009	< 0.065		
Lead	(Pb)	0.17	< 0.80		
Mercury	(Hg)	0.48	< 0.80		
Platinum	(Pt)	0.019	< 0.005		
Thallium	(Tl)	< 0.001	< 0.002		
Thorium	(Th)	< 0.001	< 0.002		
Uranium	(U)	0.036	< 0.060		
Nickel	(Ni)	0.05	< 0.20		
Silver	(Ag)	0.02	< 0.08		
Tin	(Sn)	0.07	< 0.30		
Titanium	(Ti)	0.27	< 0.60		
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)	109	200- 750					
Magnesium	(Mg)	270	25- 75					
Sodium	(Na)	5	20- 180					
Potassium	(K)	5	9- 80					
Copper	(Cu)	19	11- 30					
Zinc	(Zn)	160	130- 200					
Manganese	(Mn)	0.13	0.08- 0.50					
Chromium	(Cr)	0.43	0.40- 0.70					
Vanadium	(V)	0.030	0.018- 0.065					
Molybdenum	(Mo)	0.095	0.025- 0.060					
Boron	(B)	2.5	0.40- 3.0					
Iodine	(I)	3.9	0.25- 1.8					
Lithium	(Li)	< 0.004	0.007- 0.020					
Phosphorus	(P)	160	150- 220					
Selenium	(Se)	1.2	0.70- 1.2					
Strontium	(Sr)	0.15	0.30- 3.5					
Sulfur	(S)	48000	44000- 50000					
Cobalt	(Co)	0.010	0.004- 0.020					
Iron	(Fe)	7.3	7.0- 16					
Germanium	(Ge)	0.032	0.030- 0.040					
Rubidium	(Rb)	0.006	0.011- 0.12					
Zirconium	(Zr)	0.039	0.020- 0.44					

SPECIMEN DATA		RATIOS		
COMMENTS:		ELEMENTS	RATIOS	RANGE
Date Collected: 11/04/2016		Ca/Mg	0.404	4- 30
Date Received: 11/14/2016		Ca/P	0.681	0.8- 8
Date Completed: 11/17/2016		Na/K	1	0.5- 10
Methodology: ICP/MS		Zn/Cu	8.42	4- 20
Sample Size: 0.201 g		Zn/Cd	> 999	> 800
Sample Type: Head				
Hair Color: Brown				
Treatment:				
Shampoo: Dial For Men				



HAIR TEST 477F - follow-up

SEX: Male

Toxic & Essential Elements; Hair

TOXIC METALS					
		RESULT µg/g	REFERENCE INTERVAL	PERCENTILE	
				68 th	95 th
Aluminum	(Al)	4.8	< 7.0		
Antimony	(Sb)	0.022	< 0.066		
Arsenic	(As)	0.024	< 0.080		
Barium	(Ba)	0.13	< 1.0		
Beryllium	(Be)	< 0.01	< 0.020		
Bismuth	(Bi)	0.092	< 2.0		
Cadmium	(Cd)	< 0.009	< 0.065		
Lead	(Pb)	0.21	< 0.80		
Mercury	(Hg)	0.25	< 0.80		
Platinum	(Pt)	0.006	< 0.005		
Thallium	(Tl)	< 0.001	< 0.002		
Thorium	(Th)	< 0.001	< 0.002		
Uranium	(U)	0.026	< 0.060		
Nickel	(Ni)	0.06	< 0.20		
Silver	(Ag)	0.05	< 0.08		
Tin	(Sn)	0.05	< 0.30		
Titanium	(Ti)	0.17	< 0.60		
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)	169	200 - 750					
Magnesium	(Mg)	990	25 - 75					
Sodium	(Na)	32	20 - 180					
Potassium	(K)	3	9 - 80					
Copper	(Cu)	41	11 - 30					
Zinc	(Zn)	170	130 - 200					
Manganese	(Mn)	0.41	0.08 - 0.50					
Chromium	(Cr)	0.46	0.40 - 0.70					
Vanadium	(V)	0.018	0.018 - 0.065					
Molybdenum	(Mo)	0.091	0.025 - 0.060					
Boron	(B)	1.5	0.40 - 3.0					
Iodine	(I)	2.0	0.25 - 1.8					
Lithium	(Li)	< 0.004	0.007 - 0.020					
Phosphorus	(P)	151	150 - 220					
Selenium	(Se)	1.0	0.70 - 1.2					
Strontium	(Sr)	0.23	0.30 - 3.5					
Sulfur	(S)	47300	44000 - 50000					
Cobalt	(Co)	0.018	0.004 - 0.020					
Iron	(Fe)	5.3	7.0 - 16					
Germanium	(Ge)	0.034	0.030 - 0.040					
Rubidium	(Rb)	0.003	0.011 - 0.12					
Zirconium	(Zr)	0.016	0.020 - 0.44					

SPECIMEN DATA		RATIOS		
COMMENTS:		ELEMENTS	RATIOS	RANGE
Date Collected: 02/24/2017		Ca/Mg	0.171	4 - 30
Date Received: 03/08/2017		Ca/P	1.12	0.8 - 8
Date Completed: 03/11/2017		Na/K	10.7	0.5 - 10
Methodology: ICP/MS		Zn/Cu	4.15	4 - 20
Sample Size: 0.197 g		Zn/Cd	> 999	> 800
Sample Type: Head				
Hair Color: Brown				
Treatment:				
Shampoo: Dial Body Wash				



HAIR TEST 477G - follow-up

SEX: Male

AGE: 64

Toxic & Essential Elements; Hair

TOXIC METALS					
		RESULT µg/g	REFERENCE INTERVAL	PERCENTILE	
				68 th	95 th
Aluminum	(Al)	3.7	< 7.0		
Antimony	(Sb)	0.028	< 0.066		
Arsenic	(As)	0.028	< 0.080		
Barium	(Ba)	0.29	< 1.0		
Beryllium	(Be)	< 0.01	< 0.020		
Bismuth	(Bi)	0.056	< 2.0		
Cadmium	(Cd)	< 0.009	< 0.065		
Lead	(Pb)	0.23	< 0.80		
Mercury	(Hg)	0.26	< 0.80		
Platinum	(Pt)	0.020	< 0.005		
Thallium	(Tl)	< 0.001	< 0.002		
Thorium	(Th)	< 0.001	< 0.002		
Uranium	(U)	0.024	< 0.060		
Nickel	(Ni)	0.10	< 0.20		
Silver	(Ag)	0.09	< 0.08		
Tin	(Sn)	0.07	< 0.30		
Titanium	(Ti)	0.22	< 0.60		
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)	364	200 - 750					
Magnesium	(Mg)	580	25 - 75					
Sodium	(Na)	85	20 - 180					
Potassium	(K)	27	9 - 80					
Copper	(Cu)	22	11 - 30					
Zinc	(Zn)	170	130 - 200					
Manganese	(Mn)	0.27	0.08 - 0.50					
Chromium	(Cr)	0.44	0.40 - 0.70					
Vanadium	(V)	0.031	0.018 - 0.065					
Molybdenum	(Mo)	0.083	0.025 - 0.060					
Boron	(B)	3.2	0.40 - 3.0					
Iodine	(I)	2.2	0.25 - 1.8					
Lithium	(Li)	0.14	0.007 - 0.020					
Phosphorus	(P)	163	150 - 220					
Selenium	(Se)	1.2	0.70 - 1.2					
Strontium	(Sr)	0.67	0.30 - 3.5					
Sulfur	(S)	46800	44000 - 50000					
Cobalt	(Co)	0.018	0.004 - 0.020					
Iron	(Fe)	6.2	7.0 - 16					
Germanium	(Ge)	0.035	0.030 - 0.040					
Rubidium	(Rb)	0.030	0.011 - 0.12					
Zirconium	(Zr)	0.12	0.020 - 0.44					

SPECIMEN DATA		RATIOS		
COMMENTS: Results checked.		ELEMENTS	RATIOS	RANGE
Date Collected: 06/12/2017	Sample Size: 0.2 g	Ca/Mg	0.628	4 - 30
Date Received: 06/22/2017	Sample Type: Head	Ca/P	2.23	0.8 - 8
Date Completed: 06/28/2017	Hair Color: Brown	Na/K	3.15	0.5 - 10
Methodology: ICP/MS	Treatment:	Zn/Cu	7.73	4 - 20
	Shampoo: Dial	Zn/Cd	> 999	> 800



SEX: Male
AGE: 65

Toxic & Essential Elements; Hair

TOXIC METALS					
		RESULT µg/g	REFERENCE INTERVAL	PERCENTILE	
				68 th	95 th
Aluminum	(Al)	5.4	< 7.0		
Antimony	(Sb)	0.046	< 0.066		
Arsenic	(As)	0.015	< 0.080		
Barium	(Ba)	0.76	< 1.0		
Beryllium	(Be)	< 0.01	< 0.020		
Bismuth	(Bi)	0.073	< 2.0		
Cadmium	(Cd)	0.009	< 0.065		
Lead	(Pb)	0.35	< 0.80		
Mercury	(Hg)	0.40	< 0.80		
Platinum	(Pt)	0.013	< 0.005		
Thallium	(Tl)	< 0.001	< 0.002		
Thorium	(Th)	< 0.001	< 0.002		
Uranium	(U)	0.045	< 0.060		
Nickel	(Ni)	0.13	< 0.20		
Silver	(Ag)	0.05	< 0.08		
Tin	(Sn)	0.09	< 0.30		
Titanium	(Ti)	0.18	< 0.60		
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)	537	200 - 750					
Magnesium	(Mg)	1000	25 - 75					
Sodium	(Na)	6	20 - 180					
Potassium	(K)	3	9 - 80					
Copper	(Cu)	45	11 - 30					
Zinc	(Zn)	160	130 - 200					
Manganese	(Mn)	0.45	0.08 - 0.50					
Chromium	(Cr)	0.69	0.40 - 0.70					
Vanadium	(V)	0.017	0.018 - 0.065					
Molybdenum	(Mo)	0.083	0.025 - 0.060					
Boron	(B)	1.1	0.40 - 3.0					
Iodine	(I)	1.2	0.25 - 1.8					
Lithium	(Li)	< 0.004	0.007 - 0.020					
Phosphorus	(P)	141	150 - 220					
Selenium	(Se)	1.4	0.70 - 1.2					
Strontium	(Sr)	1.9	0.30 - 3.5					
Sulfur	(S)	47900	44000 - 50000					
Cobalt	(Co)	0.022	0.004 - 0.020					
Iron	(Fe)	6.8	7.0 - 16					
Germanium	(Ge)	0.033	0.030 - 0.040					
Rubidium	(Rb)	0.003	0.011 - 0.12					
Zirconium	(Zr)	0.059	0.020 - 0.44					

SPECIMEN DATA		RATIOS		
COMMENTS: Results checked.		ELEMENTS	RATIOS	RANGE
Date Collected: 12/14/2017		Ca/Mg	0.537	4- 30
Date Received: 12/26/2017		Ca/P	3.81	0.8- 8
Date Completed: 01/02/2018		Na/K	2	0.5- 10
Methodology: ICP/MS		Zn/Cu	3.56	4- 20
Sample Size: 0.201 g		Zn/Cd	> 999	> 800
Sample Type: Head				
Hair Color: Brown				
Treatment:				
Shampoo: Dial				

Toxic & Essential Elements; Hair

TOXIC METALS				
		RESULT µg/g	REFERENCE INTERVAL	PERCENTILE 68 th 95 th
Aluminum	(Al)	2.9	< 7.0	
Antimony	(Sb)	0.029	< 0.066	
Arsenic	(As)	0.037	< 0.080	
Barium	(Ba)	0.18	< 1.0	
Beryllium	(Be)	< 0.01	< 0.020	
Bismuth	(Bi)	0.024	< 2.0	
Cadmium	(Cd)	< 0.009	< 0.065	
Lead	(Pb)	0.12	< 0.80	
Mercury	(Hg)	0.24	< 0.80	
Platinum	(Pt)	0.014	< 0.005	
Thallium	(Tl)	< 0.001	< 0.002	
Thorium	(Th)	< 0.001	< 0.002	
Uranium	(U)	0.032	< 0.060	
Nickel	(Ni)	0.03	< 0.20	
Silver	(Ag)	0.05	< 0.08	
Tin	(Sn)	0.07	< 0.30	
Titanium	(Ti)	0.45	< 0.60	
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)	193	200– 750	
Magnesium	(Mg)	420	25– 75	
Sodium	(Na)	54	20– 180	
Potassium	(K)	35	9– 80	
Copper	(Cu)	16	11– 30	
Zinc	(Zn)	150	130– 200	
Manganese	(Mn)	0.13	0.08– 0.50	
Chromium	(Cr)	0.42	0.40– 0.70	
Vanadium	(V)	0.030	0.018– 0.065	
Molybdenum	(Mo)	0.064	0.025– 0.060	
Boron	(B)	2.3	0.40– 3.0	
Iodine	(I)	0.90	0.25– 1.8	
Lithium	(Li)	0.034	0.007– 0.020	
Phosphorus	(P)	166	150– 220	
Selenium	(Se)	1.3	0.70– 1.2	
Strontium	(Sr)	0.24	0.30– 3.5	
Sulfur	(S)	48200	44000– 50000	
Cobalt	(Co)	0.008	0.004– 0.020	
Iron	(Fe)	4.8	7.0– 16	
Germanium	(Ge)	0.033	0.030– 0.040	
Rubidium	(Rb)	0.031	0.011– 0.12	
Zirconium	(Zr)	0.019	0.020– 0.44	

SPECIMEN DATA		RATIOS		
COMMENTS: Results Checked		ELEMENTS	RATIOS	RANGE
Date Collected: 06/21/2018		Ca/Mg	0.46	4– 30
Date Received: 06/25/2018		Ca/P	1.16	0.8– 8
Date Completed: 06/29/2018		Na/K	1.54	0.5– 10
Methodology: ICP/MS		Zn/Cu	9.38	4– 20
Sample Size: 0.198 g		Zn/Cd	> 999	> 800
Sample Type: Head				
Hair Color: Brown				
Treatment:				
Shampoo: Dial Body				

Toxic & Essential Elements; Hair

TOXIC METALS					
		RESULT µg/g	REFERENCE INTERVAL	PERCENTILE	
				68 th	95 th
Aluminum	(Al)	7.5	< 7.0		
Antimony	(Sb)	0.034	< 0.066		
Arsenic	(As)	0.040	< 0.080		
Barium	(Ba)	0.93	< 1.0		
Beryllium	(Be)	< 0.01	< 0.020		
Bismuth	(Bi)	0.067	< 2.0		
Cadmium	(Cd)	< 0.009	< 0.065		
Lead	(Pb)	0.16	< 0.80		
Mercury	(Hg)	0.32	< 0.80		
Platinum	(Pt)	0.034	< 0.005		
Thallium	(Tl)	< 0.001	< 0.002		
Thorium	(Th)	< 0.001	< 0.002		
Uranium	(U)	0.042	< 0.060		
Nickel	(Ni)	0.04	< 0.20		
Silver	(Ag)	0.04	< 0.08		
Tin	(Sn)	0.13	< 0.30		
Titanium	(Ti)	0.22	< 0.60		
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)	203	200 - 750					
Magnesium	(Mg)	540	25 - 75					
Sodium	(Na)	52	20 - 180					
Potassium	(K)	8	9 - 80					
Copper	(Cu)	19	11 - 30					
Zinc	(Zn)	170	130 - 200					
Manganese	(Mn)	0.23	0.08 - 0.50					
Chromium	(Cr)	0.39	0.40 - 0.70					
Vanadium	(V)	0.015	0.018 - 0.065					
Molybdenum	(Mo)	0.075	0.025 - 0.060					
Boron	(B)	2.9	0.40 - 3.0					
Iodine	(I)	1.6	0.25 - 1.8					
Lithium	(Li)	0.007	0.007 - 0.020					
Phosphorus	(P)	156	150 - 220					
Selenium	(Se)	1.4	0.70 - 1.2					
Strontium	(Sr)	0.78	0.30 - 3.5					
Sulfur	(S)	49600	44000 - 50000					
Cobalt	(Co)	0.013	0.004 - 0.020					
Iron	(Fe)	6.3	7.0 - 16					
Germanium	(Ge)	0.033	0.030 - 0.040					
Rubidium	(Rb)	0.009	0.011 - 0.12					
Zirconium	(Zr)	0.036	0.020 - 0.44					

SPECIMEN DATA		RATIOS		
COMMENTS: results checked		ELEMENTS	RATIOS	RANGE
Date Collected: 11/29/2018	Sample Size: 0.196 g	Ca/Mg	0.376	4 - 30
Date Received: 01/02/2019	Sample Type: Head	Ca/P	1.3	0.8 - 8
Date Completed: 01/07/2019	Hair Color: Brown	Na/K	6.5	0.5 - 10
Methodology: ICP/MS	Treatment:	Zn/Cu	8.95	4 - 20
	Shampoo: Dove	Zn/Cd	> 999	> 800

Toxic & Essential Elements; Hair

TOXIC METALS				
		RESULT µg/g	REFERENCE INTERVAL	PERCENTILE 68 th 95 th
Aluminum (Al)		12	< 12	
Antimony (Sb)		0.071	< 0.080	
Arsenic (As)		0.030	< 0.12	
Barium (Ba)		0.84	< 1.5	
Beryllium (Be)		< 0.01	< 0.020	
Bismuth (Bi)		0.31	< 2.0	
Cadmium (Cd)		0.011	< 0.065	
Lead (Pb)		0.74	< 1.5	
Mercury (Hg)		0.19	< 0.80	
Platinum (Pt)		< 0.003	< 0.005	
Thallium (Tl)		< 0.001	< 0.002	
Thorium (Th)		< 0.001	< 0.002	
Uranium (U)		0.045	< 0.060	
Nickel (Ni)		0.16	< 0.40	
Silver (Ag)		0.06	< 0.10	
Tin (Sn)		0.10	< 0.30	
Titanium (Ti)		0.28	< 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)		520	375- 1100	
Magnesium (Mg)		310	40- 140	
Sodium (Na)		160	60- 400	
Potassium (K)		19	28- 160	
Copper (Cu)		62	11- 32	
Zinc (Zn)		150	120- 200	
Manganese (Mn)		0.30	0.15- 0.65	
Chromium (Cr)		0.37	0.40- 0.70	
Vanadium (V)		0.014	0.018- 0.065	
Molybdenum (Mo)		0.068	0.040- 0.080	
Boron (B)		0.30	0.40- 2.5	
Iodine (I)		1.5	0.25- 1.8	
Lithium (Li)		0.008	0.008- 0.030	
Phosphorus (P)		193	200- 300	
Selenium (Se)		1.3	0.80- 1.3	
Strontium (Sr)		1.5	1.0- 6.0	
Sulfur (S)		46500	41000- 47000	
Cobalt (Co)		0.068	0.006- 0.035	
Iron (Fe)		5.4	7.0- 16	
Germanium (Ge)		0.031	0.030- 0.040	
Rubidium (Rb)		0.018	0.030- 0.25	
Zirconium (Zr)		0.035	0.040- 1.0	
SPECIMEN DATA			RATIOS	
COMMENTS:			ELEMENTS	RANGE
Date Collected: 01/22/2019			Ca/Mg	1.68 4- 30
Date Received: 01/25/2019			Ca/P	2.69 0.8- 8
Date Completed: 01/28/2019			Na/K	8.42 0.5- 10
Methodology: ICP/MS			Zn/Cu	2.42 4- 20
Sample Size: 0.166 g			Zn/Cd	> 999 > 800
Sample Type: Public				
Hair Color: Brown				
Treatment:				
Shampoo: Dial Body Wash				

Health history for hair test 503

1. Angina, Fibromyalgia, numbness, balance issues, low BBT, fuzzy brain, many food intolerances, asthma like symptoms, allergies, etc.
2. Three wisdom teeth only. Removed at age 26 when they finally erupted. No extractions. No root canal. No braces. One crown. Had amalgam fillings on baby teeth. No idea how young.
3. All eight molars have amalgam fillings down center front to back except one replaced with resin in January. One sector of one molar broke off and amalgam is to gum line. Possible gum line fillings over back of rear molars. Four premolars have a central filling front to back. One incisor has crown. No root canals. No other teeth removed.
4. Mother had dentures form 9 years before pregnancy. Soft teeth and lots of fillings before then.
5. Flu shots every year since 2000. No travel shots. Tetanus shots about every 10 years. The standard shots in public and high school.
6. Medication and Supplements:
Meds for heart/triglycerdes/Cholesterol
Lisinopril (ACE inhibitor, BP med) 20 mg 2 X daily
Ultra Omega 3-6-9 (400 mg each of Flax, Fish, and Borage Oils) 2 X daily
Supplements:
Biocitrate Multimineral twice daily:
D-2 400 IU
Calcium (as citrate) 400 mg
Iron (as citrate) 18 mg
Iodine (as citrate) 225 mcg
Mg (as citrate) 200 mg
Zinc (as citrate) 30 mg
Selenium (Se methionine) 200 mcg
Copper 2 mg
Mn (as citrate) 10 mcg
Chromium (as citrate) 200 mcg
Molybdenum (as citrate) 100 mcg
Boron (as citrate) 3 mg
Vanadium (as aspartate) 25 mcg
Methylsulphonylmethane 10 mg
CalciumCitrate with D3 twide daily:
D3 400 IU
Calcium (as citrate) 1000 mg
Vitamin A 10,000 IU once daily
Vitamin B Complex 100 once daily
Thiamine 100mg
Riboflavin 100mg
Niacinamide 100 mg
PyridoxineHCl 100 mg
Folic Acid 400 mcg
Cyanocobalamin 100 mcg
Biotin 100 mcg
Pantothenic acid 100 mg
PABA 100 mg
Choline Bitartrate 100 mg
Inositol 100 mg
Heart Supplements:

Niacin (Sustained Release) 500 mg once daily

Taurine 1000 mg 2x daily

Ubiquinol 100 mg once daily

N-Acetyl-Cysteine 600 mg 2 X daily

Ginko & Hawthore 435 mg 2 X daily

7. Age: 58, Height 5' 11", 210 lbs male

8. Brother tested at industrial levels for Hg - shared childhood exposures. Diagnosed gluten, dairy and soy intolerant when weaned.

9. Lived:

1952-1973 On farm with orchard near Brantford, Ontario, Canada

1973-1975 Waterloo, Ontario, Canada

1975-1978 Nepean, Ontario, Canada

1978-1980 Guelph Ontario, Canada

1980-1984 Champaign, Illinois, USA

1984-1992 Medina. Ohio, USA

1992-2000 Seville, Ohio, USA

2001-present Greensburg, Indiana, USA

WIFE'S HAIR TEST TO FOLLOW, FOR COMPARITIVE PURPOSES

TOXIC METALS				PERCENTILE	
WIFE'S HAIR TEST		RESULT µg/g	REFERENCE INTERVAL	68 th	95 th
Aluminum	(Al)	7.1	< 7.0		
Antimony	(Sb)	0.015	< 0.050		
Arsenic	(As)	0.019	< 0.060		
Barium	(Ba)	0.35	< 2.0		
Beryllium	(Be)	< 0.01	< 0.020		
Bismuth	(Bi)	0.060	< 2.0		
Cadmium	(Cd)	< 0.009	< 0.050		
Lead	(Pb)	0.22	< 0.60		
Mercury	(Hg)	0.27	< 0.80		
Platinum	(Pt)	< 0.003	< 0.005		
Thallium	(Tl)	< 0.001	< 0.002		
Thorium	(Th)	< 0.001	< 0.002		
Uranium	(U)	0.040	< 0.060		
Nickel	(Ni)	0.10	< 0.30		
Silver	(Ag)	0.02	< 0.15		
Tin	(Sn)	0.08	< 0.30		
Titanium	(Ti)	0.23	< 0.70		
Total Toxic Representation					

ESSENTIAL AND OTHER ELEMENTS				PERCENTILE				
		RESULT µg/g	REFERENCE INTERVAL	2.5 th	16 th	50 th	84 th	97.5 th
Calcium	(Ca)	292	300- 1200					
Magnesium	(Mg)	30	35- 120					
Sodium	(Na)	51	20- 250					
Potassium	(K)	20	8- 75					
Copper	(Cu)	20	11- 37					
Zinc	(Zn)	160	140- 220					
Manganese	(Mn)	0.08	0.08- 0.60					
Chromium	(Cr)	0.34	0.40- 0.65					
Vanadium	(V)	0.013	0.018- 0.065					
Molybdenum	(Mo)	0.020	0.020- 0.050					
Boron	(B)	0.29	0.25- 1.5					
Iodine	(I)	5.8	0.25- 1.8					
Lithium	(Li)	< 0.004	0.007- 0.020					
Phosphorus	(P)	156	150- 220					
Selenium	(Se)	0.66	0.55- 1.1					
Strontium	(Sr)	0.92	0.50- 7.6					
Sulfur	(S)	47700	44000- 50000					
Cobalt	(Co)	0.006	0.005- 0.040					
Iron	(Fe)	4.0	7.0- 16					
Germanium	(Ge)	0.034	0.030- 0.040					
Rubidium	(Rb)	0.019	0.007- 0.096					
Zirconium	(Zr)	0.018	0.020- 0.42					

SPECIMEN DATA		RATIOS		
COMMENTS:		ELEMENTS	RATIOS	RANGE
Date Collected: 01/17/2019		Ca/Mg	9.73	4- 30
Date Received: 01/25/2019		Ca/P	1.87	1- 12
Date Completed: 01/28/2019		Na/K	2.55	0.5- 10
Methodology: ICP/MS		Zn/Cu	8	4- 20
Sample Size: 0.202 g		Zn/Cd	> 999	> 600
Sample Type: Head				
Hair Color: Brown				
Treatment:				