

# HAIR ELEMENTS



**PATIENT: Number 138**  
**SEX: Male**  
**AGE: 43**  
**Location: Jefferson City, TN, USA**

## POTENTIALLY TOXIC ELEMENTS

TOXIC ELEMENTS	RESULT $\mu\text{g/g}$	REFERENCE RANGE	PERCENTILE	
			68 <sup>th</sup>	95 <sup>th</sup>
Aluminum	13	< 12		
Antimony	0.041	< 0.080		
Arsenic	0.12	< 0.12		
Beryllium	< 0.01	< 0.020		
Bismuth	< 0.002	< 2.0		
Cadmium	0.052	< 0.15		
Lead	0.82	< 2.0		
Mercury	1.1	< 1.1		
Platinum	< 0.003	< 0.005		
Thallium	0.001	< 0.010		
Thorium	< 0.001	< 0.005		
Uranium	0.058	< 0.060		
Nickel	0.19	< 0.40		
Silver	0.02	< 0.10		
Tin	0.10	< 0.30		
Titanium	0.69	< 1.0		
Total Toxic Representation				

## ESSENTIAL AND OTHER ELEMENTS

ELEMENTS	RESULT $\mu\text{g/g}$	REFERENCE RANGE	PERCENTILE				
			2.5 <sup>th</sup>	16 <sup>th</sup>	50 <sup>th</sup>	84 <sup>th</sup>	97.5 <sup>th</sup>
Calcium	767	375- 1100					
Magnesium	190	40- 140					
Sodium	110	24- 180					
Potassium	70	20- 80					
Copper	13	9.0- 26					
Zinc	160	120- 200					
Manganese	0.20	0.20- 0.65					
Chromium	0.43	0.20- 0.45					
Vanadium	0.049	0.018- 0.065					
Molybdenum	0.054	0.040- 0.10					
Boron	0.80	0.70- 4.0					
Iodine	1.6	0.25- 1.3					
Lithium	0.009	0.008- 0.040					
Phosphorus	182	250- 400					
Selenium	1.0	0.95- 1.7					
Strontium	1.9	1.0- 6.0					
Sulfur	44600	42000- 49000					
Barium	3.2	0.50- 3.0					
Cobalt	0.054	0.013- 0.050					
Iron	13	5.8- 14					
Germanium	0.032	0.045- 0.065					
Rubidium	0.093	0.030- 0.25					
Zirconium	3.6	0.040- 1.0					

### SPECIMEN DATA

**COMMENTS:**  
 Date Collected: 12/17/2007      Sample Size: 0.202 g  
 Date Received: 12/20/2007      Sample Type: Pubic  
 Date Completed: 12/28/2007      Hair Color: Black  
 Treatment:  
 Methodology: ICP-MS      Shampoo:

### RATIOS

ELEMENTS	RATIOS	EXPECTED RANGE
Ca/Mg	4.04	4- 30
Ca/P	4.21	0.8- 8
Na/K	1.57	0.5- 10
Zn/Cu	12.3	4- 20
Zn/Cd	> 999	> 800

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