

# HAIR ELEMENTS



**PATIENT: Number 167**  
**SEX: Female**  
**AGE: 53**  
**Location: Austin, USA**

## POTENTIALLY TOXIC ELEMENTS

TOXIC ELEMENTS	RESULT $\mu\text{g/g}$	REFERENCE RANGE	PERCENTILE	
			68 <sup>th</sup>	95 <sup>th</sup>
Aluminum	2.9	< 12		
Antimony	0.017	< 0.060		
Arsenic	0.12	< 0.090		
Beryllium	< 0.01	< 0.020		
Bismuth	0.51	< 2.0		
Cadmium	0.057	< 0.10		
Lead	2.0	< 1.0		
Mercury	0.96	< 1.1		
Platinum	< 0.003	< 0.005		
Thallium	< 0.001	< 0.010		
Thorium	< 0.001	< 0.005		
Uranium	0.006	< 0.060		
Nickel	0.03	< 0.40		
Silver	0.04	< 0.10		
Tin	0.16	< 0.30		
Titanium	0.66	< 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	398	475- 1500					
Magnesium	150	45- 180					
Sodium	330	24- 180					
Potassium	94	20- 80					
Copper	15	9.0- 24					
Zinc	140	130- 200					
Manganese	0.50	0.20- 0.65					
Chromium	0.35	0.20- 0.45					
Vanadium	0.047	0.018- 0.065					
Molybdenum	0.043	0.040- 0.10					
Boron	0.90	0.70- 4.0					
Iodine	0.95	0.25- 1.3					
Lithium	0.005	0.008- 0.040					
Phosphorus	289	350- 600					
Selenium	1.1	0.95- 1.7					
Strontium	2.5	1.0- 8.0					
Sulfur	45800	43000- 50000					
Barium	0.46	0.50- 5.0					
Cobalt	0.008	0.013- 0.050					
Iron	5.3	5.8- 14					
Germanium	0.031	0.045- 0.065					
Rubidium	0.10	0.030- 0.25					
Zirconium	0.027	0.040- 1.0					

### SPECIMEN DATA

**COMMENTS:**  
 Date Collected: 2/28/2008      Sample Size: 0.199 g  
 Date Received: 3/3/2008      Sample Type: Pubic  
 Date Completed: 3/7/2008      Hair Color: Blond  
    Treatment: Bleach, Dye  
 Methodology: ICP-MS      Shampoo: Dr Bonners

### RATIOS

ELEMENTS	RATIOS	EXPECTED RANGE
Ca/Mg	2.65	4- 30
Ca/P	1.38	1- 12
Na/K	3.51	0.5- 10
Zn/Cu	9.33	4- 20
Zn/Cd	> 999	> 800

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