

# HAIR ELEMENTS



**PATIENT: Number 159**  
**SEX: Male**  
**AGE: 38**  
**Location: Pittsburgh, PA, USA**

## POTENTIALLY TOXIC ELEMENTS

TOXIC ELEMENTS	RESULT $\mu\text{g/g}$	REFERENCE RANGE	PERCENTILE	
			68 <sup>th</sup>	95 <sup>th</sup>
Aluminum	11	< 12		
Antimony	0.025	< 0.080		
Arsenic	0.078	< 0.12		
Beryllium	< 0.01	< 0.020		
Bismuth	0.054	< 2.0		
Cadmium	0.054	< 0.15		
Lead	0.47	< 2.0		
Mercury	0.12	< 1.1		
Platinum	< 0.003	< 0.005		
Thallium	< 0.001	< 0.010		
Thorium	< 0.001	< 0.005		
Uranium	0.014	< 0.060		
Nickel	0.13	< 0.40		
Silver	0.05	< 0.10		
Tin	0.09	< 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	433	375- 1100					
Magnesium	87	40- 140					
Sodium	380	24- 180					
Potassium	86	20- 80					
Copper	15	9.0- 26					
Zinc	120	120- 200					
Manganese	0.09	0.20- 0.65					
Chromium	0.46	0.20- 0.45					
Vanadium	0.037	0.018- 0.065					
Molybdenum	0.082	0.040- 0.10					
Boron	0.49	0.70- 4.0					
Iodine	0.25	0.25- 1.3					
Lithium	0.014	0.008- 0.040					
Phosphorus	235	250- 400					
Selenium	1.2	0.95- 1.7					
Strontium	0.39	1.0- 6.0					
Sulfur	44200	42000- 49000					
Barium	0.39	0.50- 3.0					
Cobalt	0.006	0.013- 0.050					
Iron	16	5.8- 14					
Germanium	0.032	0.045- 0.065					
Rubidium	0.080	0.030- 0.25					
Zirconium	2.2	0.040- 1.0					

### SPECIMEN DATA

**COMMENTS:**  
 Date Collected: 4/10/2008      Sample Size: 0.198 g  
 Date Received: 4/16/2008      Sample Type: Pubic  
 Date Completed: 4/22/2008      Hair Color: Brown  
    Treatment:  
 Methodology: ICP-MS              Shampoo:

### RATIOS

ELEMENTS	RATIOS	EXPECTED RANGE
Ca/Mg	4.98	4- 30
Ca/P	1.84	0.8- 8
Na/K	4.42	0.5- 10
Zn/Cu	8	4- 20
Zn/Cd	> 999	> 800

V06.99