

# HAIR ELEMENTS



**PATIENT: Number 108**  
**SEX: Female**  
**AGE: 54**  
**Location: Cape Town, RSA**

## POTENTIALLY TOXIC ELEMENTS

TOXIC ELEMENTS	RESULT $\mu\text{g/g}$	REFERENCE RANGE	PERCENTILE	
			68 <sup>th</sup>	95 <sup>th</sup>
Aluminum	8.7	< 7.0		
Antimony	0.015	< 0.050		
Arsenic	0.051	< 0.060		
Beryllium	< 0.01	< 0.020		
Bismuth	0.010	< 2.0		
Cadmium	0.043	< 0.10		
Lead	0.22	< 1.0		
Mercury	4.6	< 1.1		
Platinum	< 0.003	< 0.005		
Thallium	< 0.001	< 0.010		
Thorium	< 0.001	< 0.005		
Uranium	0.005	< 0.060		
Nickel	0.12	< 0.40		
Silver	0.14	< 0.15		
Tin	0.53	< 0.30		
Titanium	2.1	< 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	983	300- 1200					
Magnesium	38	35- 120					
Sodium	31	12- 90					
Potassium	14	8- 38					
Copper	12	12- 35					
Zinc	170	140- 220					
Manganese	0.12	0.15- 0.65					
Chromium	0.44	0.20- 0.40					
Vanadium	0.023	0.018- 0.065					
Molybdenum	0.026	0.028- 0.056					
Boron	0.13	0.30- 2.0					
Iodine	0.20	0.25- 1.3					
Lithium	< 0.004	0.007- 0.023					
Phosphorus	172	160- 250					
Selenium	0.75	0.95- 1.7					
Strontium	3.2	0.50- 7.6					
Sulfur	47900	44500- 52000					
Barium	0.53	0.26- 3.0					
Cobalt	0.011	0.013- 0.050					
Iron	17	5.4- 14					
Germanium	0.031	0.045- 0.065					
Rubidium	0.014	0.007- 0.096					
Zirconium	0.11	0.020- 0.42					

### SPECIMEN DATA

**COMMENTS:**

Date Collected: 8/17/2007      Sample Size: 0.201 g  
 Date Received: 9/10/2007      Sample Type: Head  
 Date Completed: 9/15/2007      Hair Color: Brown  
 Treatment:  
 Methodology: ICP-MS      Shampoo: Mop

V06.99

### RATIOS

ELEMENTS	RATIOS	EXPECTED RANGE
Ca/Mg	25.9	4- 30
Ca/P	5.72	1- 12
Na/K	2.21	0.5- 10
Zn/Cu	14.2	4- 20
Zn/Cd	> 999	> 800