

# HAIR ELEMENTS



**PATIENT: Number 204**  
**SEX: Female**  
**AGE: 48**  
**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	9.7	< 7.0		
Antimony	0.044	< 0.050		
Arsenic	0.043	< 0.060		
Beryllium	< 0.01	< 0.020		
Bismuth	0.031	< 2.0		
Cadmium	0.13	< 0.10		
Lead	0.54	< 1.0		
Mercury	1.9	< 1.1		
Platinum	< 0.003	< 0.005		
Thallium	< 0.001	< 0.010		
Thorium	< 0.001	< 0.005		
Uranium	0.004	< 0.060		
Nickel	0.18	< 0.40		
Silver	2.0	< 0.15		
Tin	0.42	< 0.30		
Titanium	1.7	< 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	454	300- 1200					
Magnesium	25	35- 120					
Sodium	37	12- 90					
Potassium	14	8- 38					
Copper	10	12- 35					
Zinc	170	140- 220					
Manganese	0.22	0.15- 0.65					
Chromium	0.76	0.20- 0.40					
Vanadium	0.036	0.018- 0.065					
Molybdenum	0.032	0.028- 0.056					
Boron	0.39	0.30- 2.0					
Iodine	1.8	0.25- 1.3					
Lithium	0.009	0.007- 0.023					
Phosphorus	167	160- 250					
Selenium	0.83	0.95- 1.7					
Strontium	0.96	0.50- 7.6					
Sulfur	47700	44500- 52000					
Barium	0.55	0.26- 3.0					
Cobalt	0.013	0.013- 0.050					
Iron	14	5.4- 14					
Germanium	0.034	0.045- 0.065					
Rubidium	0.011	0.007- 0.096					
Zirconium	0.49	0.020- 0.42					

### SPECIMEN DATA

**COMMENTS:**

Date Collected: 7/17/2008  
 Date Received: 8/5/2008  
 Date Completed: 8/7/2008

Sample Size: 0.173 g  
 Sample Type: Head  
 Hair Color: Brown  
 Treatment:  
 Shampoo:

Methodology: ICP-MS

V06.99

### RATIOS

ELEMENTS	RATIOS	EXPECTED RANGE
Ca/Mg	18.2	4- 30
Ca/P	2.72	1- 12
Na/K	2.64	0.5- 10
Zn/Cu	17	4- 20
Zn/Cd	> 999	> 800