

# HAIR ELEMENTS



**PATIENT: Number 135**  
**SEX: Female**  
**AGE: 69**  
**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	3.9	< 7.0		
Antimony	0.015	< 0.050		
Arsenic	0.053	< 0.060		
Beryllium	< 0.01	< 0.020		
Bismuth	0.017	< 2.0		
Cadmium	0.064	< 0.10		
Lead	0.50	< 1.0		
Mercury	0.66	< 1.1		
Platinum	< 0.003	< 0.005		
Thallium	< 0.001	< 0.010		
Thorium	< 0.001	< 0.005		
Uranium	0.004	< 0.060		
Nickel	0.09	< 0.40		
Silver	1.0	< 0.15		
Tin	0.06	< 0.30		
Titanium	0.77	< 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	935	300- 1200					
Magnesium	35	35- 120					
Sodium	21	12- 90					
Potassium	9	8- 38					
Copper	12	12- 35					
Zinc	180	140- 220					
Manganese	0.16	0.15- 0.65					
Chromium	0.33	0.20- 0.40					
Vanadium	0.068	0.018- 0.065					
Molybdenum	0.018	0.028- 0.056					
Boron	3.5	0.30- 2.0					
Iodine	0.50	0.25- 1.3					
Lithium	0.005	0.007- 0.023					
Phosphorus	132	160- 250					
Selenium	0.86	0.95- 1.7					
Strontium	1.7	0.50- 7.6					
Sulfur	43500	44500- 52000					
Barium	0.34	0.26- 3.0					
Cobalt	0.007	0.013- 0.050					
Iron	11	5.4- 14					
Germanium	0.026	0.045- 0.065					
Rubidium	0.007	0.007- 0.096					
Zirconium	0.027	0.020- 0.42					

SPECIMEN DATA				RATIOS		
<b>COMMENTS:</b>				<b>ELEMENTS</b>	<b>RATIOS</b>	<b>EXPECTED RANGE</b>
Date Collected: 12/4/2007	Sample Size: 0.197 g			Ca/Mg	26.7	4- 30
Date Received: 12/10/2007	Sample Type: Head			Ca/P	7.08	1- 12
Date Completed: 12/14/2007	Hair Color: Gray			Na/K	2.33	0.5- 10
	Treatment:			Zn/Cu	15	4- 20
Methodology: ICP-MS	Shampoo: Pantene			Zn/Cd	> 999	> 800

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