

# HAIR ELEMENTS



**PATIENT: Number 130**  
**SEX: Female**  
**AGE: 64**  
**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	15	< 7.0		
Antimony	0.030	< 0.050		
Arsenic	0.029	< 0.060		
Beryllium	< 0.01	< 0.020		
Bismuth	0.035	< 2.0		
Cadmium	0.017	< 0.10		
Lead	0.31	< 1.0		
Mercury	1.0	< 1.1		
Platinum	< 0.003	< 0.005		
Thallium	< 0.001	< 0.010		
Thorium	< 0.001	< 0.005		
Uranium	0.005	< 0.060		
Nickel	0.16	< 0.40		
Silver	0.04	< 0.15		
Tin	0.09	< 0.30		
Titanium	0.53	< 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	1200	300- 1200					
Magnesium	38	35- 120					
Sodium	67	12- 90					
Potassium	41	8- 38					
Copper	17	12- 35					
Zinc	180	140- 220					
Manganese	0.36	0.15- 0.65					
Chromium	0.46	0.20- 0.40					
Vanadium	0.039	0.018- 0.065					
Molybdenum	0.026	0.028- 0.056					
Boron	0.20	0.30- 2.0					
Iodine	0.54	0.25- 1.3					
Lithium	0.010	0.007- 0.023					
Phosphorus	173	160- 250					
Selenium	0.86	0.95- 1.7					
Strontium	2.0	0.50- 7.6					
Sulfur	49100	44500- 52000					
Barium	0.49	0.26- 3.0					
Cobalt	0.016	0.013- 0.050					
Iron	8.5	5.4- 14					
Germanium	0.029	0.045- 0.065					
Rubidium	0.041	0.007- 0.096					
Zirconium	0.10	0.020- 0.42					

SPECIMEN DATA				RATIOS		
<b>COMMENTS:</b>				<b>ELEMENTS</b>	<b>RATIOS</b>	<b>EXPECTED RANGE</b>
Date Collected: 10/15/2007	Sample Size: 0.202 g			Ca/Mg	31.6	4- 30
Date Received: 10/29/2007	Sample Type: Head			Ca/P	6.94	1- 12
Date Completed: 11/1/2007	Hair Color:			Na/K	1.63	0.5- 10
	Treatment: Bleach			Zn/Cu	10.6	4- 20
Methodology: ICP-MS	Shampoo: Pantene			Zn/Cd	> 999	> 800
				V06.99		