

# HAIR ELEMENTS



**PATIENT: Number 119**  
**SEX: Male**  
**AGE: 40**  
**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	3.8	< 7.0		
Antimony	0.012	< 0.066		
Arsenic	0.062	< 0.080		
Beryllium	< 0.01	< 0.020		
Bismuth	0.002	< 2.0		
Cadmium	0.027	< 0.15		
Lead	0.17	< 2.0		
Mercury	1.2	< 1.1		
Platinum	< 0.003	< 0.005		
Thallium	< 0.001	< 0.010		
Thorium	< 0.001	< 0.005		
Uranium	< 0.001	< 0.060		
Nickel	0.09	< 0.40		
Silver	0.01	< 0.12		
Tin	0.02	< 0.30		
Titanium	0.65	< 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	273	200- 750					
Magnesium	18	25- 75					
Sodium	12	12- 90					
Potassium	6	9- 40					
Copper	15	10- 28					
Zinc	220	130- 200					
Manganese	0.06	0.15- 0.65					
Chromium	0.49	0.20- 0.40					
Vanadium	0.042	0.018- 0.065					
Molybdenum	0.020	0.025- 0.064					
Boron	0.60	0.40- 3.0					
Iodine	0.27	0.25- 1.3					
Lithium	0.007	0.007- 0.023					
Phosphorus	184	160- 250					
Selenium	1.0	0.95- 1.7					
Strontium	0.53	0.30- 3.5					
Sulfur	45800	44500- 52000					
Barium	0.10	0.16- 1.6					
Cobalt	0.008	0.013- 0.035					
Iron	9.0	5.4- 13					
Germanium	0.030	0.045- 0.065					
Rubidium	0.005	0.011- 0.12					
Zirconium	0.020	0.020- 0.44					

SPECIMEN DATA				RATIOS		
<b>COMMENTS:</b>				<b>ELEMENTS</b>	<b>RATIOS</b>	<b>EXPECTED RANGE</b>
Date Collected: 10/2/2007	Sample Size: 0.197 g			Ca/Mg	15.2	4- 30
Date Received: 10/5/2007	Sample Type: Head			Ca/P	1.48	0.8- 8
Date Completed: 10/8/2007	Hair Color: Brown			Na/K	2	0.5- 10
	Treatment:			Zn/Cu	14.7	4- 20
Methodology: ICP-MS	Shampoo: Gilli			Zn/Cd	> 999	> 800

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