

# HAIR ELEMENTS



**PATIENT: No 9**  
**SEX: Male**  
**AGE: 53**  
**Location: Cape Town, South Africa**

POTENTIALLY TOXIC ELEMENTS				
TOXIC ELEMENTS	RESULT $\mu\text{g/g}$	REFERENCE RANGE	PERCENTILE	
			68 <sup>th</sup>	95 <sup>th</sup>
Aluminum	9.6	< 7.0		
Antimony	< 0.01	< 0.066		
Arsenic	0.052	< 0.080		
Beryllium	< 0.01	< 0.020		
Bismuth	< 0.002	< 0.060		
Cadmium	0.069	< 0.15		
Lead	0.40	< 2.0		
Mercury	2.1	< 1.1		
Platinum	< 0.003	< 0.005		
Thallium	< 0.001	< 0.010		
Thorium	< 0.001	< 0.005		
Uranium	0.005	< 0.060		
Nickel	0.47	< 0.40		
Silver	0.10	< 0.12		
Tin	0.13	< 0.30		
Titanium	0.76	< 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	974	200- 750					
Magnesium	87	25- 75					
Sodium	130	12- 90					
Potassium	57	9- 40					
Copper	17	10- 28					
Zinc	190	130- 200					
Manganese	0.16	0.15- 0.65					
Chromium	0.31	0.20- 0.40					
Vanadium	0.015	0.018- 0.065					
Molybdenum	0.019	0.025- 0.064					
Boron	6.9	0.40- 3.0					
Iodine	1.0	0.25- 1.3					
Lithium	0.007	0.007- 0.023					
Phosphorus	220	160- 250					
Selenium	1.1	0.95- 1.7					
Strontium	2.3	0.30- 3.5					
Sulfur	48700	44500- 52000					
Barium	0.28	0.16- 1.6					
Cobalt	0.088	0.013- 0.035					
Iron	5.6	5.4- 13					
Germanium	0.036	0.045- 0.065					
Rubidium	0.068	0.011- 0.12					
Zirconium	0.043	0.020- 0.44					

SPECIMEN DATA				RATIOS		
<b>COMMENTS:</b>				<b>ELEMENTS</b>	<b>RATIOS</b>	<b>EXPECTED RANGE</b>
Date Collected: 8/12/2006	Sample Size: 0.198 g			Ca/Mg	11.2	4- 30
Date Received: 9/7/2006	Sample Type: Head			Ca/P	4.43	0.8- 8
Date Completed: 9/13/2006	Hair Color: Brown			Na/K	2.28	0.5- 10
	Treatment:			Zn/Cu	11.2	4- 20
Methodology: ICP-MS	Shampoo: Borax			Zn/Cd	> 999	> 800

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