

# HAIR ELEMENTS



**PATIENT: Number 116**  
**SEX: Female**  
**AGE: 44**  
**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	13	< 12		
Antimony	< 0.01	< 0.060		
Arsenic	0.043	< 0.090		
Beryllium	< 0.01	< 0.020		
Bismuth	0.020	< 2.0		
Cadmium	0.022	< 0.10		
Lead	0.18	< 1.0		
Mercury	1.6	< 1.1		
Platinum	< 0.003	< 0.005		
Thallium	< 0.001	< 0.010		
Thorium	< 0.001	< 0.005		
Uranium	< 0.001	< 0.060		
Nickel	0.34	< 0.40		
Silver	0.04	< 0.10		
Tin	0.06	< 0.30		
Titanium	0.67	< 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	756	475- 1500					
Magnesium	61	45- 180					
Sodium	120	24- 180					
Potassium	55	20- 80					
Copper	20	9.0- 24					
Zinc	180	130- 200					
Manganese	0.19	0.20- 0.65					
Chromium	0.37	0.20- 0.45					
Vanadium	0.036	0.018- 0.065					
Molybdenum	0.015	0.040- 0.10					
Boron	1.7	0.70- 4.0					
Iodine	0.72	0.25- 1.3					
Lithium	0.015	0.008- 0.040					
Phosphorus	260	350- 600					
Selenium	0.90	0.95- 1.7					
Strontium	1.7	1.0- 8.0					
Sulfur	44800	43000- 50000					
Barium	1.2	0.50- 5.0					
Cobalt	0.023	0.013- 0.050					
Iron	11	5.8- 14					
Germanium	0.033	0.045- 0.065					
Rubidium	0.061	0.030- 0.25					
Zirconium	0.78	0.040- 1.0					

SPECIMEN DATA				RATIOS		
<b>COMMENTS:</b>				<b>ELEMENTS</b>	<b>RATIOS</b>	<b>EXPECTED RANGE</b>
Date Collected: 9/28/2007	Sample Size: 0.198 g			Ca/Mg	12.4	4- 30
Date Received: 10/5/2007	Sample Type: Pubic			Ca/P	2.91	1- 12
Date Completed: 10/8/2007	Hair Color:			Na/K	2.18	0.5- 10
	Treatment:			Zn/Cu	9	4- 20
Methodology: ICP-MS	Shampoo:			Zn/Cd	> 999	> 800

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