

# HAIR ELEMENTS



**PATIENT: Number 1**  
**SEX: Male**  
**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	9.4	< 7.0		
Antimony	0.027	< 0.066		
Arsenic	0.046	< 0.080		
Beryllium	< 0.01	< 0.020		
Bismuth	< 0.002	< 0.060		
Cadmium	0.061	< 0.15		
Lead	2.9	< 2.0		
Mercury	0.88	< 1.1		
Platinum	< 0.003	< 0.005		
Thallium	< 0.001	< 0.010		
Thorium	< 0.001	< 0.005		
Uranium	0.003	< 0.060		
Nickel	0.62	< 0.40		
Silver	0.25	< 0.12		
Tin	0.18	< 0.30		
Titanium	0.31	< 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	814	200- 750					
Magnesium	36	25- 75					
Sodium	500	12- 90					
Potassium	79	9- 40					
Copper	14	10- 28					
Zinc	200	130- 200					
Manganese	1.1	0.15- 0.65					
Chromium	0.44	0.20- 0.40					
Vanadium	0.048	0.018- 0.065					
Molybdenum	0.018	0.025- 0.064					
Boron	0.93	0.40- 3.0					
Iodine	3.6	0.25- 1.3					
Lithium	0.004	0.007- 0.023					
Phosphorus	137	160- 250					
Selenium	0.85	0.95- 1.7					
Strontium	2.7	0.30- 3.5					
Sulfur	46900	44500- 52000					
Barium	0.79	0.16- 1.6					
Cobalt	0.012	0.013- 0.035					
Iron	8.1	5.4- 13					
Germanium	0.039	0.045- 0.065					
Rubidium	0.13	0.011- 0.12					
Zirconium	0.059	0.020- 0.44					

SPECIMEN DATA				RATIOS		
<b>COMMENTS:</b>				<b>ELEMENTS</b>	<b>RATIOS</b>	<b>EXPECTED RANGE</b>
Date Collected: 8/14/2006	Sample Size: 0.203 g			Ca/Mg	22.6	4- 30
Date Received: 8/31/2006	Sample Type: Head			Ca/P	5.94	0.8- 8
Date Completed: 9/5/2006	Hair Color: Brown			Na/K	6.33	0.5- 10
	Treatment:			Zn/Cu	14.3	4- 20
Methodology: ICP-MS	Shampoo: Pantene			Zn/Cd	> 999	> 800

# HAIR ELEMENTS



**PATIENT: Number 1a**  
**SEX: Male**  
**AGE: 45**  
**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	12	< 7.0		
Antimony	0.035	< 0.066		
Arsenic	0.073	< 0.080		
Beryllium	< 0.01	< 0.020		
Bismuth	0.018	< 2.0		
Cadmium	0.011	< 0.15		
Lead	1.3	< 2.0		
Mercury	0.30	< 1.1		
Platinum	< 0.003	< 0.005		
Thallium	< 0.001	< 0.010		
Thorium	< 0.001	< 0.005		
Uranium	0.008	< 0.060		
Nickel	0.12	< 0.40		
Silver	0.06	< 0.12		
Tin	0.08	< 0.30		
Titanium	0.35	< 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	408	200- 750					
Magnesium	31	25- 75					
Sodium	310	12- 90					
Potassium	72	9- 40					
Copper	14	10- 28					
Zinc	160	130- 200					
Manganese	0.99	0.15- 0.65					
Chromium	0.46	0.20- 0.40					
Vanadium	0.067	0.018- 0.065					
Molybdenum	0.021	0.025- 0.064					
Boron	0.72	0.40- 3.0					
Iodine	1.2	0.25- 1.3					
Lithium	0.079	0.007- 0.023					
Phosphorus	156	160- 250					
Selenium	0.83	0.95- 1.7					
Strontium	1.4	0.30- 3.5					
Sulfur	49300	44500- 52000					
Barium	0.45	0.16- 1.6					
Cobalt	0.018	0.013- 0.035					
Iron	9.0	5.4- 13					
Germanium	0.033	0.045- 0.065					
Rubidium	0.12	0.011- 0.12					
Zirconium	0.077	0.020- 0.44					

### SPECIMEN DATA

**COMMENTS:**

Date Collected: 9/9/2007      Sample Size: 0.196 g  
 Date Received: 9/13/2007      Sample Type: Head  
 Date Completed: 9/18/2007      Hair Color: Black  
    Treatment:  
 Methodology: ICP-MS              Shampoo: Organix

V06.99

### RATIOS

ELEMENTS	RATIOS	EXPECTED RANGE
Ca/Mg	13.2	4- 30
Ca/P	2.62	0.8- 8
Na/K	4.31	0.5- 10
Zn/Cu	11.4	4- 20
Zn/Cd	> 999	> 800