

# HAIR ELEMENTS



**PATIENT:** Number 63  
**SEX:** Female  
**AGE:** 5  
**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	21	< 8.0		
Antimony	0.026	< 0.066		
Arsenic	0.051	< 0.080		
Beryllium	0.014	< 0.020		
Bismuth	0.028	< 0.13		
Cadmium	0.22	< 0.10		
Lead	4.9	< 1.0		
Mercury	2.4	< 0.40		
Platinum	< 0.003	< 0.005		
Thallium	0.001	< 0.010		
Thorium	0.001	< 0.005		
Uranium	0.014	< 0.060		
Nickel	0.45	< 0.40		
Silver	0.25	< 0.20		
Tin	0.23	< 0.30		
Titanium	1.6	< 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	331	140- 500					
Magnesium	77	15- 45					
Sodium	43	12- 90					
Potassium	14	9- 60					
Copper	75	10- 22					
Zinc	140	100- 190					
Manganese	0.34	0.20- 0.55					
Chromium	0.42	0.26- 0.50					
Vanadium	0.36	0.030- 0.10					
Molybdenum	0.22	0.048- 0.13					
Boron	0.57	0.35- 3.0					
Iodine	0.49	0.25- 1.3					
Lithium	0.011	0.007- 0.023					
Phosphorus	176	160- 250					
Selenium	0.81	0.95- 1.7					
Strontium	1.8	0.19- 2.0					
Sulfur	51200	45500- 53000					
Barium	0.34	0.16- 1.2					
Cobalt	0.044	0.013- 0.035					
Iron	22	8.0- 19					
Germanium	0.036	0.045- 0.065					
Rubidium	0.022	0.012- 0.16					
Zirconium	1.1	0.030- 1.0					

SPECIMEN DATA				RATIOS		
<b>COMMENTS:</b>				<b>ELEMENTS</b>	<b>RATIOS</b>	<b>EXPECTED RANGE</b>
Date Collected:	1/31/2007	Sample Size:	0.201 g	Ca/Mg	4.3	4- 30
Date Received:	2/8/2007	Sample Type:	Head	Ca/P	1.88	1- 12
Date Completed:	2/13/2007	Hair Color:	Blond	Na/K	3.07	0.5- 10
		Treatment:		Zn/Cu	1.87	4- 20
Methodology:	ICP-MS	Shampoo:		Zn/Cd	636	> 800

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