

# HAIR ELEMENTS



**PATIENT:** Dagny Baleson  
**SEX:** Female  
**AGE:** 11  
**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	5.3	< 8.0		
Antimony	0.012	< 0.066		
Arsenic	0.042	< 0.060		
Beryllium	< 0.01	< 0.020		
Bismuth	0.018	< 0.12		
Cadmium	0.034	< 0.10		
Lead	0.50	< 1.0		
Mercury	0.47	< 0.40		
Platinum	< 0.003	< 0.005		
Thallium	< 0.001	< 0.010		
Thorium	< 0.001	< 0.005		
Uranium	0.077	< 0.060		
Nickel	0.09	< 0.40		
Silver	0.21	< 0.16		
Tin	0.09	< 0.30		
Titanium	0.28	< 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	656	250- 800					
Magnesium	120	25- 90					
Sodium	270	12- 90					
Potassium	160	7- 40					
Copper	37	12- 35					
Zinc	170	120- 220					
Manganese	0.15	0.18- 0.60					
Chromium	0.40	0.23- 0.45					
Vanadium	0.050	0.025- 0.10					
Molybdenum	< 0.01	0.037- 0.083					
Boron	0.68	0.30- 1.7					
Iodine	0.37	0.25- 1.3					
Lithium	0.005	0.007- 0.023					
Phosphorus	151	160- 250					
Selenium	0.84	0.95- 1.7					
Strontium	2.5	0.37- 3.6					
Sulfur	43300	45500- 53000					
Barium	0.33	0.21- 1.9					
Cobalt	0.012	0.013- 0.050					
Iron	17	6.0- 17					
Germanium	0.040	0.045- 0.065					
Rubidium	0.13	0.008- 0.080					
Zirconium	0.036	0.030- 0.40					

SPECIMEN DATA				RATIOS		
<b>COMMENTS:</b>				<b>ELEMENTS</b>	<b>RATIOS</b>	<b>EXPECTED RANGE</b>
Date Collected:	10/11/2006	Sample Size:	0.2 g	Ca/Mg	5.47	4- 30
Date Received:	11/16/2006	Sample Type:	Head	Ca/P	4.34	1- 12
Date Completed:	11/21/2006	Hair Color:	Brown	Na/K	1.69	0.5- 10
		Treatment:		Zn/Cu	4.59	4- 20
Methodology:	ICP-MS	Shampoo:	Kerastase	Zn/Cd	> 999	> 800

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