

HAIR ELEMENTS

Patient: Number 50 A

Sex: Male

Age: 27

Location: London, UK

POTENTIALLY TOXIC ELEMENTS				
TOXIC ELEMENTS	RESULT µg/g	REFERENCE RANGE	PERCENTILE	
			68 th	95 th
Aluminum	4.3	< 7.0	██████████	██████████
Antimony	0.033	< 0.066	██████████	██████████
Arsenic	0.11	< 0.080	██████████	██████████
Beryllium	< 0.01	< 0.020	██████████	██████████
Bismuth	0.010	< 0.060	██████████	██████████
Cadmium	0.042	< 0.15	██████████	██████████
Lead	0.40	< 2.0	██████████	██████████
Mercury	1.0	< 1.1	██████████	██████████
Platinum	< 0.003	< 0.005	██████████	██████████
Thallium	< 0.001	< 0.010	██████████	██████████
Thorium	< 0.001	< 0.005	██████████	██████████
Uranium	0.005	< 0.060	██████████	██████████
Nickel	0.16	< 0.40	██████████	██████████
Silver	0.06	< 0.12	██████████	██████████
Tin	0.09	< 0.30	██████████	██████████
Titanium	0.49	< 1.0	██████████	██████████
Total Toxic Representation			██████████	██████████

ESSENTIAL AND OTHER ELEMENTS						
ELEMENTS	RESULT µg/g	REFERENCE RANGE	PERCENTILE			
			2.5 th	16 th	50 th	84 th
Calcium	1500	200- 750	██████████	██████████	██████████	██████████
Magnesium	27	25- 75	██████████	██████████	██████████	██████████
Sodium	23	12- 90	██████████	██████████	██████████	██████████
Potassium	7	9- 40	██████████	██████████	██████████	██████████
Copper	22	10- 28	██████████	██████████	██████████	██████████
Zinc	130	130- 200	██████████	██████████	██████████	██████████
Manganese	0.07	0.15- 0.65	██████████	██████████	██████████	██████████
Chromium	0.34	0.20- 0.40	██████████	██████████	██████████	██████████
Vanadium	0.026	0.018- 0.065	██████████	██████████	██████████	██████████
Molybdenum	0.050	0.025- 0.064	██████████	██████████	██████████	██████████
Boron	0.43	0.40- 3.0	██████████	██████████	██████████	██████████
Iodine	0.17	0.25- 1.3	██████████	██████████	██████████	██████████
Lithium	0.004	0.007- 0.023	██████████	██████████	██████████	██████████
Phosphorus	236	160- 250	██████████	██████████	██████████	██████████
Selenium	0.92	0.95- 1.7	██████████	██████████	██████████	██████████
Strontium	2.3	0.30- 3.5	██████████	██████████	██████████	██████████
Sulfur	44800	44500- 52000	██████████	██████████	██████████	██████████
Barium	0.64	0.16- 1.6	██████████	██████████	██████████	██████████
Cobalt	0.015	0.013- 0.035	██████████	██████████	██████████	██████████
Iron	10	5.4- 13	██████████	██████████	██████████	██████████
Germanium	0.049	0.045- 0.065	██████████	██████████	██████████	██████████
Rubidium	0.009	0.011- 0.12	██████████	██████████	██████████	██████████
Zirconium	0.12	0.020- 0.44	██████████	██████████	██████████	██████████

SPECIMEN DATA			RATIOS		
COMMENTS:			ELEMENTS	RATIOS	EXPECTED RANGE
Date Collected: 7/25/2005	Sample Size: 0.203 g		Ca/Mg	55.6	4- 30
Date Received: 7/27/2005	Sample Type: Head		Ca/P	6.36	0.8- 8
Date Completed: 7/30/2005	Hair Color:		Na/K	3.29	0.5- 10
	Treatment:		Zn/Cu	5.91	4- 20
Methodology: ICP-MS	Shampoo:		Zn/Cd	> 999	> 800
V06.99					

HAIR ELEMENTS

Patient: Number 50 B
 Sex: Male
 Age: 27
 Location: London, UK



POTENTIALLY TOXIC ELEMENTS				
TOXIC ELEMENTS	RESULT $\mu\text{g/g}$	REFERENCE RANGE	PERCENTILE	
			68 th	95 th
Aluminum	3.2	< 7.0		
Antimony	0.012	< 0.066		
Arsenic	0.056	< 0.080		
Beryllium	< 0.01	< 0.020		
Bismuth	0.007	< 0.060		
Cadmium	0.028	< 0.15		
Lead	1.4	< 2.0		
Mercury	2.1	< 1.1		
Platinum	< 0.003	< 0.005		
Thallium	< 0.001	< 0.010		
Thorium	< 0.001	< 0.005		
Uranium	0.002	< 0.060		
Nickel	0.17	< 0.40		
Silver	0.30	< 0.12		
Tin	0.12	< 0.30		
Titanium	0.33	< 1.0		
Total Toxic Representation				

ESSENTIAL AND OTHER ELEMENTS								
ELEMENTS	RESULT $\mu\text{g/g}$	REFERENCE RANGE	PERCENTILE					
			2.5 th	16 th	50 th	84 th	97.5 th	
Calcium	1950	200- 750						
Magnesium	35	25- 75						
Sodium	40	12- 90						
Potassium	20	9- 40						
Copper	56	10- 28						
Zinc	140	130- 200						
Manganese	0.08	0.15- 0.65						
Chromium	0.27	0.20- 0.40						
Vanadium	0.017	0.018- 0.065						
Molybdenum	0.044	0.025- 0.064						
Boron	0.51	0.40- 3.0						
Iodine	0.50	0.25- 1.3						
Lithium	< 0.004	0.007- 0.023						
Phosphorus	204	160- 250						
Selenium	0.71	0.95- 1.7						
Strontium	2.9	0.30- 3.5						
Sulfur	44900	44500- 52000						
Barium	0.51	0.16- 1.6						
Cobalt	0.008	0.013- 0.035						
Iron	8.1	5.4- 13						
Germanium	0.031	0.045- 0.065						
Rubidium	0.022	0.011- 0.12						
Zirconium	0.086	0.020- 0.44						

SPECIMEN DATA			RATIOS		
COMMENTS:			ELEMENTS	RATIOS	EXPECTED RANGE
Date Collected: 3/24/2006	Sample Size: 0.204 g		Ca/Mg	55.7	4- 30
Date Received: 3/28/2006	Sample Type: Head		Ca/P	9.56	0.8- 8
Date Completed: 3/30/2006	Hair Color:		Na/K	2	0.5- 10
Methodology: ICP-MS	Treatment:		Zn/Cu	2.5	4- 20
	Shampoo:		Zn/Cd	> 999	> 800

V06.99

HAIR ELEMENTS

Patient: Number 50 C
 Sex: Male
 Age: 27
 Location: London, UK



POTENTIALLY TOXIC ELEMENTS				
TOXIC ELEMENTS	RESULT $\mu\text{g/g}$	REFERENCE RANGE	PERCENTILE	
			68 th	95 th
Aluminum	3.7	< 7.0		
Antimony	0.020	< 0.066		
Arsenic	0.070	< 0.080		
Beryllium	< 0.01	< 0.020		
Bismuth	0.011	< 0.060		
Cadmium	0.014	< 0.15		
Lead	0.87	< 2.0		
Mercury	1.2	< 1.1		
Platinum	< 0.003	< 0.005		
Thallium	< 0.001	< 0.010		
Thorium	< 0.001	< 0.005		
Uranium	0.015	< 0.060		
Nickel	0.11	< 0.40		
Silver	0.05	< 0.12		
Tin	0.11	< 0.30		
Titanium	0.44	< 1.0		
Total Toxic Representation				

ESSENTIAL AND OTHER ELEMENTS							
ELEMENTS	RESULT $\mu\text{g/g}$	REFERENCE RANGE	PERCENTILE				
			2.5 th	16 th	50 th	84 th	97.5 th
Calcium	599	200- 750					
Magnesium	83	25- 75					
Sodium	210	12- 90					
Potassium	34	9- 40					
Copper	41	10- 28					
Zinc	130	130- 200					
Manganese	0.21	0.15- 0.65					
Chromium	0.30	0.20- 0.40					
Vanadium	0.025	0.018- 0.065					
Molybdenum	0.045	0.025- 0.064					
Boron	1.6	0.40- 3.0					
Iodine	0.31	0.25- 1.3					
Lithium	0.006	0.007- 0.023					
Phosphorus	206	160- 250					
Selenium	0.68	0.95- 1.7					
Strontium	1.3	0.30- 3.5					
Sulfur	45600	44500- 52000					
Barium	0.28	0.16- 1.6					
Cobalt	0.009	0.013- 0.035					
Iron	13	5.4- 13					
Germanium	0.027	0.045- 0.065					
Rubidium	0.056	0.011- 0.12					
Zirconium	0.065	0.020- 0.44					

SPECIMEN DATA			RATIOS		
COMMENTS:			ELEMENTS	RATIOS	EXPECTED RANGE
Date Collected: 7/1/2006	Sample Size: 0.199 g		Ca/Mg	7.22	4- 30
Date Received: 7/5/2006	Sample Type: Head		Ca/P	2.91	0.8- 8
Date Completed: 7/8/2006	Hair Color:		Na/K	6.18	0.5- 10
	Treatment:		Zn/Cu	3.17	4- 20
Methodology: ICP-MS	Shampoo:		Zn/Cd	> 999	> 800
			V06.99		

HAIR ELEMENTS

Patient: Number 50 D
 Sex: Male
 Age: 27
 Location: London, UK



POTENTIALLY TOXIC ELEMENTS				
TOXIC ELEMENTS	RESULT $\mu\text{g/g}$	REFERENCE RANGE	PERCENTILE	
			68 th	95 th
Aluminum	4.5	< 7.0		
Antimony	0.035	< 0.066		
Arsenic	0.091	< 0.080		
Beryllium	< 0.01	< 0.020		
Bismuth	0.041	< 0.060		
Cadmium	0.084	< 0.15		
Lead	0.71	< 2.0		
Mercury	0.39	< 1.1		
Platinum	< 0.003	< 0.005		
Thallium	< 0.001	< 0.010		
Thorium	< 0.001	< 0.005		
Uranium	0.005	< 0.060		
Nickel	0.31	< 0.40		
Silver	1.0	< 0.12		
Tin	0.13	< 0.30		
Titanium	0.38	< 1.0		
Total Toxic Representation				

ESSENTIAL AND OTHER ELEMENTS							
ELEMENTS	RESULT $\mu\text{g/g}$	REFERENCE RANGE	PERCENTILE				
			2.5 th	16 th	50 th	84 th	97.5 th
Calcium	1160	200- 750					
Magnesium	200	25- 75					
Sodium	86	12- 90					
Potassium	42	9- 40					
Copper	65	10- 28					
Zinc	160	130- 200					
Manganese	0.09	0.15- 0.65					
Chromium	0.46	0.20- 0.40					
Vanadium	0.021	0.018- 0.065					
Molybdenum	0.062	0.025- 0.064					
Boron	0.49	0.40- 3.0					
Iodine	0.25	0.25- 1.3					
Lithium	< 0.004	0.007- 0.023					
Phosphorus	251	160- 250					
Selenium	0.96	0.95- 1.7					
Strontium	1.6	0.30- 3.5					
Sulfur	47500	44500- 52000					
Barium	0.34	0.16- 1.6					
Cobalt	0.011	0.013- 0.035					
Iron	5.3	5.4- 13					
Germanium	0.035	0.045- 0.065					
Rubidium	0.043	0.011- 0.12					
Zirconium	0.063	0.020- 0.44					

SPECIMEN DATA			RATIOS		
COMMENTS:			ELEMENTS	RATIOS	EXPECTED RANGE
Date Collected: 10/1/2006	Sample Size: 0.205 g		Ca/Mg	5.8	4- 30
Date Received: 10/4/2006	Sample Type: Head		Ca/P	4.62	0.8- 8
Date Completed: 10/7/2006	Hair Color:		Na/K	2.05	0.5- 10
	Treatment:		Zn/Cu	2.46	4- 20
Methodology: ICP-MS	Shampoo:		Zn/Cd	> 999	> 800
			V06.99		

HAIR ELEMENTS

Patient: Number 50 E

Sex: Male

Age: 27

Location: London, UK



POTENTIALLY TOXIC ELEMENTS				
TOXIC ELEMENTS	RESULT $\mu\text{g/g}$	REFERENCE RANGE	PERCENTILE	
			68 th	95 th
Aluminum	3.8	< 7.0	██████████	
Antimony	0.016	< 0.066	████	
Arsenic	0.054	< 0.080	██████████	
Beryllium	< 0.01	< 0.020		
Bismuth	0.006	< 0.060	████	
Cadmium	0.027	< 0.15	████	
Lead	0.60	< 2.0	██████████	
Mercury	0.14	< 1.1	████	
Platinum	< 0.003	< 0.005		
Thallium	< 0.001	< 0.010		
Thorium	< 0.001	< 0.005		
Uranium	0.004	< 0.060	████	
Nickel	0.08	< 0.40	██████████	
Silver	0.49	< 0.12	██	
Tin	0.05	< 0.30	████	
Titanium	0.50	< 1.0	██████████	
Total Toxic Representation			██████████	

ESSENTIAL AND OTHER ELEMENTS							
ELEMENTS	RESULT $\mu\text{g/g}$	REFERENCE RANGE	PERCENTILE				
			2.5 th	16 th	50 th	84 th	97.5 th
Calcium	678	200- 750			██████████		
Magnesium	24	25- 75		██████████			
Sodium	75	12- 90		██████████			
Potassium	36	9- 40		██████████			
Copper	36	10- 28		██████████			
Zinc	130	130- 200		██████████			
Manganese	0.07	0.15- 0.65	██████████	██████████			
Chromium	0.20	0.20- 0.40		██████████			
Vanadium	0.013	0.018- 0.065		██████████			
Molybdenum	0.066	0.025- 0.064		██████████			
Boron	0.44	0.40- 3.0		██████████			
Iodine	0.20	0.25- 1.3		██████████			
Lithium	< 0.004	0.007- 0.023	██████████	██████████			
Phosphorus	234	160- 250		██████████			
Selenium	0.78	0.95- 1.7		██████████			
Strontium	1.2	0.30- 3.5			████		
Sulfur	41900	44500- 52000		██████████			
Barium	0.22	0.16- 1.6		██████████			
Cobalt	0.005	0.013- 0.035	██████████	██████████			
Iron	6.9	5.4- 13			████		
Germanium	0.019	0.045- 0.065	██████████	██████████			
Rubidium	0.052	0.011- 0.12			████		
Zirconium	0.038	0.020- 0.44		██████████			

SPECIMEN DATA			RATIOS		
COMMENTS:			ELEMENTS	RATIOS	EXPECTED RANGE
Date Collected: 12/30/2006	Sample Size: 0.199 g		Ca/Mg	28.3	4- 30
Date Received: 1/3/2007	Sample Type: Head		Ca/P	2.9	0.8- 8
Date Completed: 1/4/2007	Hair Color:		Na/K	2.08	0.5- 10
	Treatment:		Zn/Cu	3.61	4- 20
Methodology: ICP-MS	Shampoo:		Zn/Cd	> 999	> 800
		V06.99			