

HAIR ELEMENTS



PATIENT: Number 110
SEX: Female
AGE: 35
Location: Cape Town, RSA

| POTENTIALLY TOXIC ELEMENTS | | | | |
|----------------------------|------------------------|-----------------|------------------|------------------|
| TOXIC ELEMENTS | RESULT $\mu\text{g/g}$ | REFERENCE RANGE | PERCENTILE | |
| | | | 68 th | 95 th |
| Aluminum | 7.1 | < 7.0 | | |
| Antimony | 0.022 | < 0.050 | | |
| Arsenic | 0.051 | < 0.060 | | |
| Beryllium | < 0.01 | < 0.020 | | |
| Bismuth | 0.037 | < 2.0 | | |
| Cadmium | < 0.009 | < 0.10 | | |
| Lead | 0.38 | < 1.0 | | |
| Mercury | 0.80 | < 1.1 | | |
| Platinum | < 0.003 | < 0.005 | | |
| Thallium | 0.001 | < 0.010 | | |
| Thorium | < 0.001 | < 0.005 | | |
| Uranium | 0.004 | < 0.060 | | |
| Nickel | 0.21 | < 0.40 | | |
| Silver | 0.14 | < 0.15 | | |
| Tin | 0.29 | < 0.30 | | |
| Titanium | 0.41 | < 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 | 941 | 300- 1200 | | | | | |
| Magnesium | 59 | 35- 120 | | | | | |
| Sodium | 99 | 12- 90 | | | | | |
| Potassium | 65 | 8- 38 | | | | | |
| Copper | 9.8 | 12- 35 | | | | | |
| Zinc | 180 | 140- 220 | | | | | |
| Manganese | 0.14 | 0.15- 0.65 | | | | | |
| Chromium | 0.43 | 0.20- 0.40 | | | | | |
| Vanadium | 0.055 | 0.018- 0.065 | | | | | |
| Molybdenum | 0.023 | 0.028- 0.056 | | | | | |
| Boron | 1.3 | 0.30- 2.0 | | | | | |
| Iodine | 1.1 | 0.25- 1.3 | | | | | |
| Lithium | 0.005 | 0.007- 0.023 | | | | | |
| Phosphorus | 172 | 160- 250 | | | | | |
| Selenium | 0.65 | 0.95- 1.7 | | | | | |
| Strontium | 2.0 | 0.50- 7.6 | | | | | |
| Sulfur | 49000 | 44500- 52000 | | | | | |
| Barium | 2.7 | 0.26- 3.0 | | | | | |
| Cobalt | 0.008 | 0.013- 0.050 | | | | | |
| Iron | 8.3 | 5.4- 14 | | | | | |
| Germanium | 0.034 | 0.045- 0.065 | | | | | |
| Rubidium | 0.076 | 0.007- 0.096 | | | | | |
| Zirconium | 0.080 | 0.020- 0.42 | | | | | |

| SPECIMEN DATA | | | | RATIOS | | |
|---------------------------|----------------------|--|--|-----------------|---------------|-----------------------|
| COMMENTS: | | | | ELEMENTS | RATIOS | EXPECTED RANGE |
| Date Collected: 9/10/2007 | Sample Size: 0.186 g | | | Ca/Mg | 15.9 | 4- 30 |
| Date Received: 9/13/2007 | Sample Type: Head | | | Ca/P | 5.47 | 1- 12 |
| Date Completed: 9/18/2007 | Hair Color: Black | | | Na/K | 1.52 | 0.5- 10 |
| | Treatment: Dye | | | Zn/Cu | 18.4 | 4- 20 |
| Methodology: ICP-MS | Shampoo: Joico | | | Zn/Cd | > 999 | > 800 |

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