

# HAIR ELEMENTS



**PATIENT: Number 269**  
**SEX: Female**  
**AGE: 34**  
**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                   | 41                     | < 7.0           | [Bar chart showing result at 100th percentile] |  |  |
| Antimony                   | 0.13                   | < 0.050         | [Bar chart showing result at 100th percentile] |  |  |
| Arsenic                    | 0.034                  | < 0.060         | [Bar chart showing result at 100th percentile] |  |  |
| Barium                     | 1.3                    | < 2.0           | [Bar chart showing result at 100th percentile] |  |  |
| Beryllium                  | < 0.01                 | < 0.020         | [Bar chart showing result at 100th percentile] |  |  |
| Bismuth                    | 0.13                   | < 2.0           | [Bar chart showing result at 100th percentile] |  |  |
| Cadmium                    | 0.16                   | < 0.050         | [Bar chart showing result at 100th percentile] |  |  |
| Lead                       | 4.2                    | < 0.60          | [Bar chart showing result at 100th percentile] |  |  |
| Mercury                    | 4.7                    | < 0.80          | [Bar chart showing result at 100th percentile] |  |  |
| Platinum                   | < 0.003                | < 0.005         | [Bar chart showing result at 100th percentile] |  |  |
| Thallium                   | 0.001                  | < 0.002         | [Bar chart showing result at 100th percentile] |  |  |
| Thorium                    | 0.002                  | < 0.002         | [Bar chart showing result at 100th percentile] |  |  |
| Uranium                    | 0.020                  | < 0.060         | [Bar chart showing result at 100th percentile] |  |  |
| Nickel                     | 1.5                    | < 0.30          | [Bar chart showing result at 100th percentile] |  |  |
| Silver                     | 1.3                    | < 0.15          | [Bar chart showing result at 100th percentile] |  |  |
| Tin                        | 1.0                    | < 0.30          | [Bar chart showing result at 100th percentile] |  |  |
| Titanium                   | 0.84                   | < 0.70          | [Bar chart showing result at 100th percentile] |  |  |
| Total Toxic Representation |                        |                 |  | [Bar chart showing result at 100th percentile] |  |

| 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                      | 1490                   | 300- 1200       | [Bar chart showing result at 100th percentile] |                  |                  |                  |                    |
| Magnesium                    | 56                     | 35- 120         | [Bar chart showing result at 100th percentile] |                  |                  |                  |                    |
| Sodium                       | 450                    | 20- 250         | [Bar chart showing result at 100th percentile] |                  |                  |                  |                    |
| Potassium                    | 91                     | 8- 75           | [Bar chart showing result at 100th percentile] |                  |                  |                  |                    |
| Copper                       | 29                     | 11- 37          | [Bar chart showing result at 100th percentile] |                  |                  |                  |                    |
| Zinc                         | 180                    | 140- 220        | [Bar chart showing result at 100th percentile] |                  |                  |                  |                    |
| Manganese                    | 1.5                    | 0.08- 0.60      | [Bar chart showing result at 100th percentile] |                  |                  |                  |                    |
| Chromium                     | 0.47                   | 0.40- 0.65      | [Bar chart showing result at 100th percentile] |                  |                  |                  |                    |
| Vanadium                     | 0.098                  | 0.018- 0.065    | [Bar chart showing result at 100th percentile] |                  |                  |                  |                    |
| Molybdenum                   | 0.033                  | 0.020- 0.050    | [Bar chart showing result at 100th percentile] |                  |                  |                  |                    |
| Boron                        | 0.40                   | 0.25- 1.5       | [Bar chart showing result at 100th percentile] |                  |                  |                  |                    |
| Iodine                       | 0.57                   | 0.25- 1.8       | [Bar chart showing result at 100th percentile] |                  |                  |                  |                    |
| Lithium                      | 0.013                  | 0.007- 0.020    | [Bar chart showing result at 100th percentile] |                  |                  |                  |                    |
| Phosphorus                   | 239                    | 150- 220        | [Bar chart showing result at 100th percentile] |                  |                  |                  |                    |
| Selenium                     | 0.86                   | 0.55- 1.1       | [Bar chart showing result at 100th percentile] |                  |                  |                  |                    |
| Strontium                    | 6.0                    | 0.50- 7.6       | [Bar chart showing result at 100th percentile] |                  |                  |                  |                    |
| Sulfur                       | 51900                  | 44000- 50000    | [Bar chart showing result at 100th percentile] |                  |                  |                  |                    |
| Cobalt                       | 0.069                  | 0.005- 0.040    | [Bar chart showing result at 100th percentile] |                  |                  |                  |                    |
| Iron                         | 17                     | 7.0- 16         | [Bar chart showing result at 100th percentile] |                  |                  |                  |                    |
| Germanium                    | 0.040                  | 0.030- 0.040    | [Bar chart showing result at 100th percentile] |                  |                  |                  |                    |
| Rubidium                     | 0.087                  | 0.007- 0.096    | [Bar chart showing result at 100th percentile] |                  |                  |                  |                    |
| Zirconium                    | 1.2                    | 0.020- 0.42     | [Bar chart showing result at 100th percentile] |                  |                  |                  |                    |

| SPECIMEN DATA             |                      |  |  | RATIOS          |               |                       |
|---------------------------|----------------------|--|--|-----------------|---------------|-----------------------|
| <b>COMMENTS:</b>          |                      |  |  | <b>ELEMENTS</b> | <b>RATIOS</b> | <b>EXPECTED RANGE</b> |
| Date Collected: 3/12/2009 | Sample Size: 0.197 g |  |  | Ca/Mg           | 26.6          | 4- 30                 |
| Date Received: 3/16/2009  | Sample Type: Head    |  |  | Ca/P            | 6.23          | 1- 12                 |
| Date Completed: 3/20/2009 | Hair Color: Brown    |  |  | Na/K            | 4.95          | 0.5- 10               |
| Client Reference:         | Treatment:           |  |  | Zn/Cu           | 6.21          | 4- 20                 |
| Methodology: ICP-MS       | Shampoo:             |  |  | Zn/Cd           | > 999         | > 800                 |

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