

# HAIR ELEMENTS



**PATIENT: Number 243**  
**SEX: Male**  
**AGE: 75**  
**LOCATION: Bologna, Northern Italy**

## POTENTIALLY TOXIC ELEMENTS

| TOXIC ELEMENTS             | RESULT<br>µg/g | REFERENCE RANGE | PERCENTILE       |                  |
|----------------------------|----------------|-----------------|------------------|------------------|
|                            |                |                 | 68 <sup>th</sup> | 95 <sup>th</sup> |
| Aluminum                   | 2.2            | < 7.0           |                  |                  |
| Antimony                   | 0.033          | < 0.066         |                  |                  |
| Arsenic                    | 0.10           | < 0.080         |                  |                  |
| Barium                     | 0.21           | < 1.0           |                  |                  |
| Beryllium                  | < 0.01         | < 0.020         |                  |                  |
| Bismuth                    | 0.016          | < 2.0           |                  |                  |
| Cadmium                    | 0.048          | < 0.065         |                  |                  |
| Lead                       | 0.43           | < 0.80          |                  |                  |
| Mercury                    | 0.71           | < 0.80          |                  |                  |
| Platinum                   | < 0.003        | < 0.005         |                  |                  |
| Thallium                   | < 0.001        | < 0.002         |                  |                  |
| Thorium                    | < 0.001        | < 0.002         |                  |                  |
| Uranium                    | 0.014          | < 0.060         |                  |                  |
| Nickel                     | 0.10           | < 0.20          |                  |                  |
| Silver                     | 0.20           | < 0.08          |                  |                  |
| Tin                        | 0.08           | < 0.30          |                  |                  |
| Titanium                   | 0.38           | < 0.60          |                  |                  |
| Total Toxic Representation |                |                 |                  |                  |

## ESSENTIAL AND OTHER ELEMENTS

| ELEMENTS   | RESULT<br>µg/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    | 262            | 200- 750        |                   |                  |                  |                  |                    |
| Magnesium  | 18             | 25- 75          |                   |                  |                  |                  |                    |
| Sodium     | 98             | 20- 180         |                   |                  |                  |                  |                    |
| Potassium  | 52             | 9- 80           |                   |                  |                  |                  |                    |
| Copper     | 7.9            | 11- 30          |                   |                  |                  |                  |                    |
| Zinc       | 120            | 130- 200        |                   |                  |                  |                  |                    |
| Manganese  | 0.11           | 0.08- 0.50      |                   |                  |                  |                  |                    |
| Chromium   | 0.70           | 0.40- 0.70      |                   |                  |                  |                  |                    |
| Vanadium   | 0.13           | 0.018- 0.065    |                   |                  |                  |                  |                    |
| Molybdenum | 0.23           | 0.025- 0.060    |                   |                  |                  |                  |                    |
| Boron      | 1.7            | 0.40- 3.0       |                   |                  |                  |                  |                    |
| Iodine     | 0.47           | 0.25- 1.8       |                   |                  |                  |                  |                    |
| Lithium    | 0.011          | 0.007- 0.020    |                   |                  |                  |                  |                    |
| Phosphorus | 128            | 150- 220        |                   |                  |                  |                  |                    |
| Selenium   | 0.91           | 0.70- 1.2       |                   |                  |                  |                  |                    |
| Strontium  | 0.74           | 0.30- 3.5       |                   |                  |                  |                  |                    |
| Sulfur     | 45200          | 44000- 50000    |                   |                  |                  |                  |                    |
| Cobalt     | 0.16           | 0.004- 0.020    |                   |                  |                  |                  |                    |
| Iron       | 14             | 7.0- 16         |                   |                  |                  |                  |                    |
| Germanium  | 0.026          | 0.030- 0.040    |                   |                  |                  |                  |                    |
| Rubidium   | 0.047          | 0.011- 0.12     |                   |                  |                  |                  |                    |
| Zirconium  | 0.053          | 0.020- 0.44     |                   |                  |                  |                  |                    |

### SPECIMEN DATA

**COMMENTS:**  
 Date Collected: 12/31/2008      Sample Size: 0.198 g  
 Date Received: 1/20/2009      Sample Type: Head  
 Date Completed: 1/23/2009      Hair Color:  
 Client Reference:      Treatment:  
 Methodology: ICP-MS      Shampoo: Ordinary

V010.08

### RATIOS

| ELEMENTS | RATIOS | EXPECTED RANGE |
|----------|--------|----------------|
| Ca/Mg    | 14.6   | 4- 30          |
| Ca/P     | 2.05   | 0.8- 8         |
| Na/K     | 1.88   | 0.5- 10        |
| Zn/Cu    | 15.2   | 4- 20          |
| Zn/Cd    | > 999  | > 800          |

### **Health history for hair test 243**

He has got dentures now.

Very, very poorly in hospital for 2 months with a 3,000 platelet count.

Had prostate cancer 5 years ago and RA for 10 years.

Bone marrow biopsy shows it's clean and platelets are produced ok, but destroyed very, very fast (still docs can't find out what activated his immune system).

Has been breathing in cobalt dust from sharpening inox-cutting discs for 25 years, exposure ended 10 years ago. They ruled out leukaemia from start but cannot raise his platelets as yet!