

| TOXIC METALS               |      |                |                       |                                                 |
|----------------------------|------|----------------|-----------------------|-------------------------------------------------|
|                            |      | RESULT<br>µg/g | REFERENCE<br>INTERVAL | PERCENTILE<br>68 <sup>th</sup> 95 <sup>th</sup> |
| Aluminum                   | (Al) | 7.4            | < 7.0                 |                                                 |
| Antimony                   | (Sb) | 0.020          | < 0.066               |                                                 |
| Arsenic                    | (As) | 0.039          | < 0.080               |                                                 |
| Barium                     | (Ba) | 0.88           | < 1.0                 |                                                 |
| Beryllium                  | (Be) | < 0.01         | < 0.020               |                                                 |
| Bismuth                    | (Bi) | 0.003          | < 2.0                 |                                                 |
| Cadmium                    | (Cd) | 0.012          | < 0.065               |                                                 |
| Lead                       | (Pb) | 0.47           | < 0.80                |                                                 |
| Mercury                    | (Hg) | 0.08           | < 0.80                |                                                 |
| Platinum                   | (Pt) | < 0.003        | < 0.005               |                                                 |
| Thallium                   | (Tl) | < 0.001        | < 0.002               |                                                 |
| Thorium                    | (Th) | 0.002          | < 0.002               |                                                 |
| Uranium                    | (U)  | 0.017          | < 0.060               |                                                 |
| Nickel                     | (Ni) | 0.16           | < 0.20                |                                                 |
| Silver                     | (Ag) | 0.59           | < 0.08                |                                                 |
| Tin                        | (Sn) | 0.18           | < 0.30                |                                                 |
| Titanium                   | (Ti) | 0.18           | < 0.60                |                                                 |
| Total Toxic Representation |      |                |                       |                                                 |

| ESSENTIAL AND OTHER ELEMENTS |      |                |                       |                                                                                                       |
|------------------------------|------|----------------|-----------------------|-------------------------------------------------------------------------------------------------------|
|                              |      | RESULT<br>µg/g | REFERENCE<br>INTERVAL | PERCENTILE<br>2.5 <sup>th</sup> 16 <sup>th</sup> 50 <sup>th</sup> 84 <sup>th</sup> 97.5 <sup>th</sup> |
| Calcium                      | (Ca) | 283            | 200 - 750             |                                                                                                       |
| Magnesium                    | (Mg) | 29             | 25 - 75               |                                                                                                       |
| Sodium                       | (Na) | 16             | 20 - 180              |                                                                                                       |
| Potassium                    | (K)  | 17             | 9 - 80                |                                                                                                       |
| Copper                       | (Cu) | 16             | 11 - 30               |                                                                                                       |
| Zinc                         | (Zn) | 190            | 130 - 200             |                                                                                                       |
| Manganese                    | (Mn) | 0.45           | 0.08 - 0.50           |                                                                                                       |
| Chromium                     | (Cr) | 0.39           | 0.40 - 0.70           |                                                                                                       |
| Vanadium                     | (V)  | 0.025          | 0.018 - 0.065         |                                                                                                       |
| Molybdenum                   | (Mo) | 0.045          | 0.025 - 0.060         |                                                                                                       |
| Boron                        | (B)  | 0.61           | 0.40 - 3.0            |                                                                                                       |
| Iodine                       | (I)  | 0.56           | 0.25 - 1.8            |                                                                                                       |
| Lithium                      | (Li) | 0.016          | 0.007 - 0.020         |                                                                                                       |
| Phosphorus                   | (P)  | 181            | 150 - 220             |                                                                                                       |
| Selenium                     | (Se) | 0.63           | 0.70 - 1.2            |                                                                                                       |
| Strontium                    | (Sr) | 0.40           | 0.30 - 3.5            |                                                                                                       |
| Sulfur                       | (S)  | 46500          | 44000 - 50000         |                                                                                                       |
| Cobalt                       | (Co) | 0.005          | 0.004 - 0.020         |                                                                                                       |
| Iron                         | (Fe) | 11             | 7.0 - 16              |                                                                                                       |
| Germanium                    | (Ge) | 0.033          | 0.030 - 0.040         |                                                                                                       |
| Rubidium                     | (Rb) | 0.026          | 0.011 - 0.12          |                                                                                                       |
| Zirconium                    | (Zr) | 0.035          | 0.020 - 0.44          |                                                                                                       |

| SPECIMEN DATA              |  | RATIOS   |        |          |
|----------------------------|--|----------|--------|----------|
| COMMENTS:                  |  | ELEMENTS | RATIOS | RANGE    |
| Date Collected: 08/17/2026 |  | Ca/Mg    | 9.76   | 4 - 30   |
| Date Received: 08/24/2026  |  | Ca/P     | 1.56   | 0.8 - 8  |
| Date Reported: 08/26/2026  |  | Na/K     | 0.941  | 0.5 - 10 |
| Methodology: ICP/MS        |  | Zn/Cu    | 11.9   | 4 - 20   |
|                            |  | Zn/Cd    | > 999  | > 800    |

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Lab number: H260824-2264-1  
Patient: Wayne Cook

Hair Head

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Client: 34337

HAIR ELEMENTS REPORT  
INTRODUCTION

Hair is an excretory tissue for essential, nonessential and potentially toxic elements. In general, the amount of an element that is irreversibly incorporated into growing hair is proportional to the level of the element in other body tissues. Therefore, hair elements analysis provides an indirect screening test for physiological excess, deficiency or maldistribution of elements in the body. Clinical research indicates that hair levels of specific elements, particularly potentially toxic elements such as cadmium, mercury, lead and arsenic, are highly correlated with pathological disorders. For such elements, levels in hair may be more indicative of body stores than the levels in blood and urine.

All screening tests have limitations that must be taken into consideration. The correlation between element levels and physiological disorders is determined by numerous factors. Individual variability and compensatory mechanisms are major factors that affect the relationship between the distribution of elements in hair and symptoms and pathological conditions. It is also very important to keep in mind that scalp hair is vulnerable to external contamination of elements by exposure to hair treatments and products. Likewise, some hair treatments (e.g. permanent solutions, dyes, and bleach) can strip hair of endogenously acquired elements and result in false low values. Careful consideration of the limitations must be made in the interpretation of results of hair analysis. The data provided should be considered in conjunction with symptomology, diet analysis, occupation and lifestyle, physical examination and the results of other analytical laboratory tests.



Drive



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