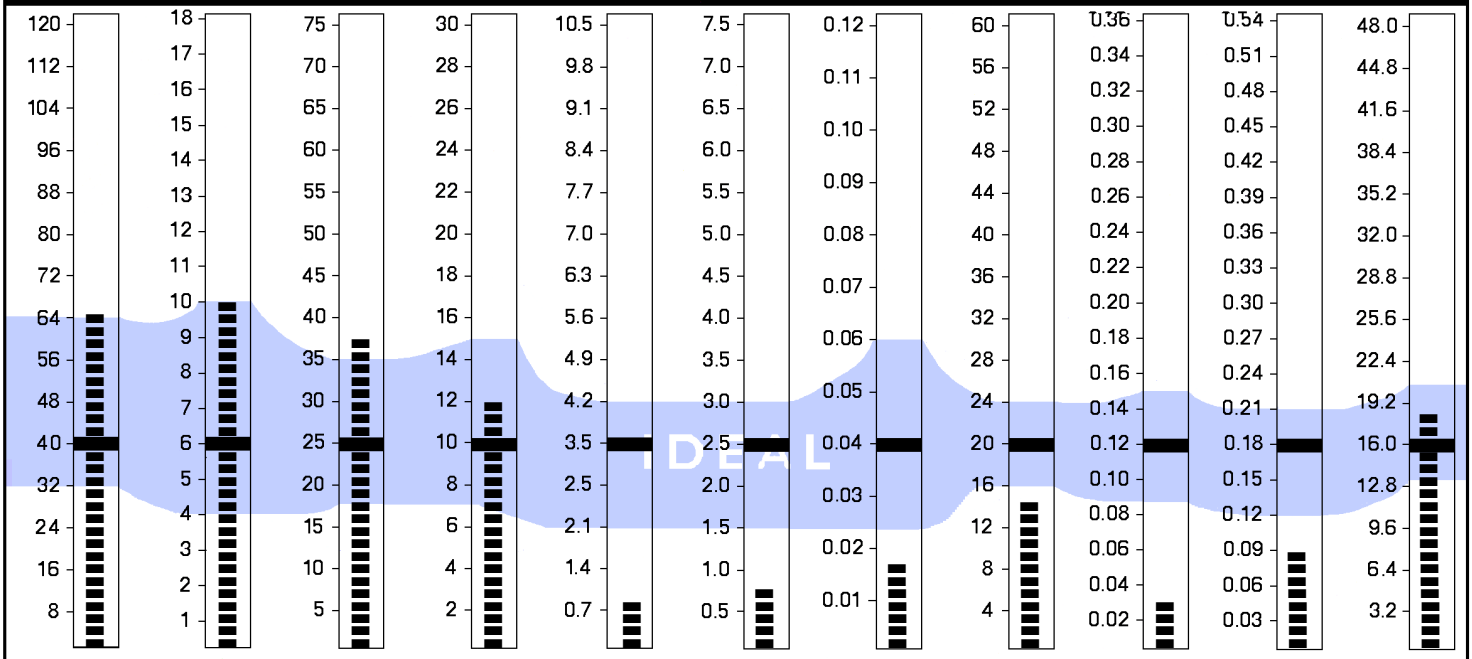
ARL ANALYTICAL RESEARCH LABS, INC.

2225 W. Alice Ave. • Phoenix, AZ 85021 USA • (602) 995-1580

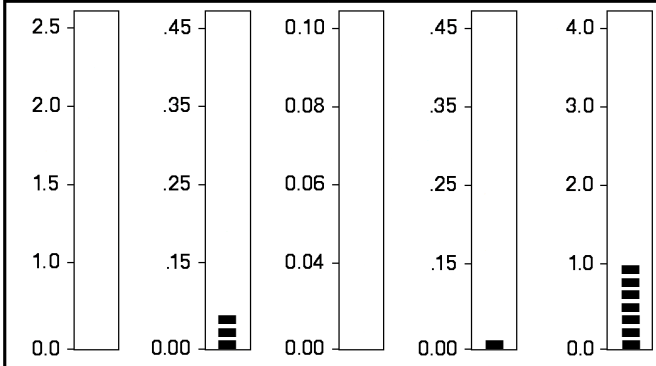
| PATIENT NAME: [redacted] | | | Will Houghton | |
|---|---|---|---|---|
| SEX: M | AGE: 42 | DATE: 7/11/2025 | LAB NO. [redacted] | CLIENT ACCT. NO. [redacted] |

## NUTRIENT MINERALS



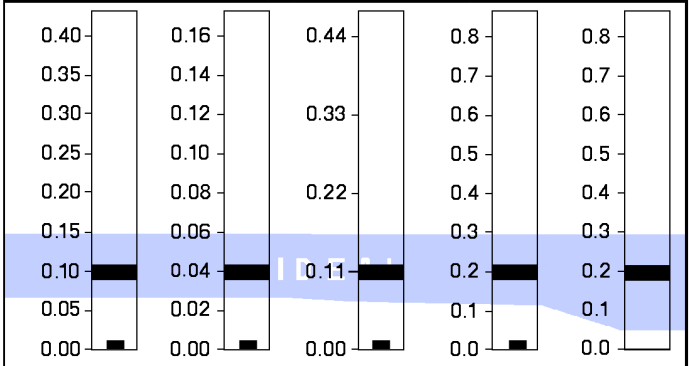

| CALCIUM (Ca) | MAGNESIUM (Mg) | SODIUM (Na) | POTASSIUM (K) | IRON (Fe) | COPPER (Cu) | MANGANESE (Mn) | ZINC (Zn) | CHROMIUM (Cr) | SELENIUM (Se) | PHOSPHORUS (P) |
|---|---|---|---|---|---|---|---|---|---|---|
| 63.0 | 10.0 | 37.0 | 12.0 | 0.8 | 0.7 | 0.016 | 14.0 | 0.030 | 0.086 | 18.0 |
| PREVIOUS TEST 126.0 | PREVIOUS TEST 15.0 | PREVIOUS TEST 22.0 | PREVIOUS TEST 12.0 | PREVIOUS TEST 0.5 | PREVIOUS TEST 1.1 | PREVIOUS TEST 0.013 | PREVIOUS TEST 16.0 | PREVIOUS TEST 0.029 | PREVIOUS TEST 0.069 | PREVIOUS TEST 22.0 |

## TOXIC METALS



| LEAD (Pb) | MERCURY (Hg) | CADMIUM (Cd) | ARSENIC (As) | ALUMINUM (Al) |
|---|---|---|---|---|
| 0.006 | 0.052 | 0.001 | 0.023 | 1.04 |
| PREVIOUS TEST 0.010 | PREVIOUS TEST 0.019 | PREVIOUS TEST 0.001 | PREVIOUS TEST 0.006 | PREVIOUS TEST 0.49 |

## ADDITIONAL MINERALS




| NICKEL (Ni) | COBALT (Co) | MOLYBDENUM (Mo) | LITHIUM (Li) | BORON (B) |
|---|---|---|---|---|
| 0.010 | 0.003 | 0.004 | 0.001 | N/A |
| PREVIOUS TEST 0.025 | PREVIOUS TEST 0.005 | PREVIOUS TEST 0.003 | PREVIOUS TEST 0.001 | PREVIOUS TEST N/A |

## SIGNIFICANT MINERAL RATIOS

| MINERAL RATIO | IDEAL RATIO | CURRENT RATIO | % OF IDEAL | PREVIOUS RATIO | LOW | IDEAL | HIGH |
|---|---|---|---|---|---|---|---|
| CA/MG | 6.67 | 6.30 | 94 | 8.40 | | | |
| CA/K | 4.00 | 5.25 | 131 | 10.50 | | | |
| NA/MG | 4.17 | 3.70 | 89 | 1.47 | | | |
| NA/K | 2.50 | 3.08 | 123 | 1.83 | | | |
| ZN/CU | 8.00 | 20.00 | 250 | 14.55 | | | |
| CA/P | 2.50 | 3.50 | 140 | 5.73 | | | |

MIXED OXIDIZER [ ] FAST OXIDIZER [ ] SLOW OXIDIZER ***

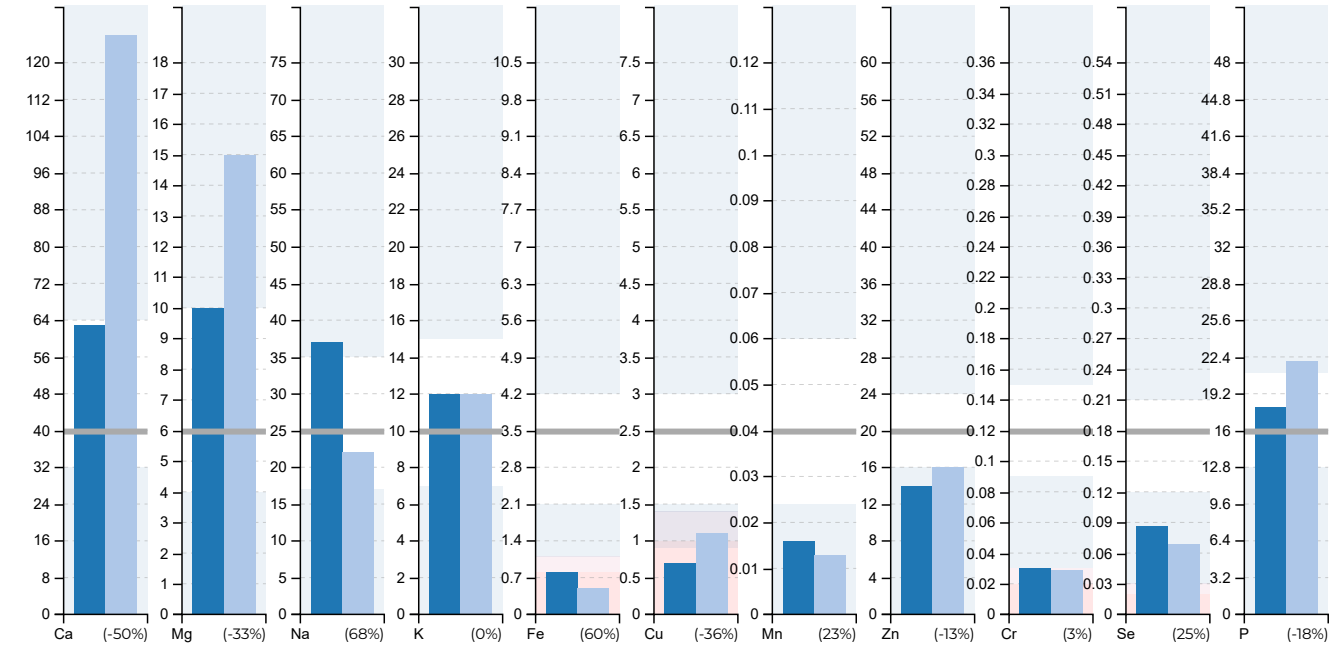
N/A -- NOT AVAILABLE REPORTED IN Mg/% Testing by ACCUTRACE LABORATORIES, INC. • CLIA# 03D0641886 • Phoenix, AZ USA 85021 COPYRIGHT © 1981-2002 by ANALYTICAL RESEARCH LABORATORIES, INC. ARL-10 3/07

**Name:** Patrick Esara MP | **Sex:** Male | **Age:** 42

**Practitioner:** Mr. Will Houghton

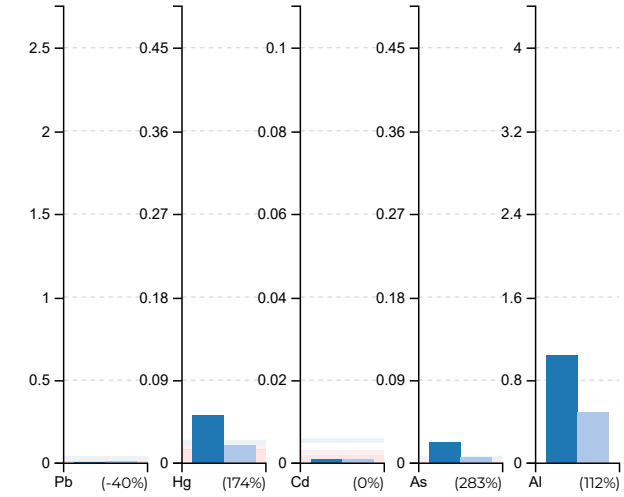
**Legend:** Current test Previous test | **Date:** July 15, 2025 | **Sample type:** Head

## Significant Minerals



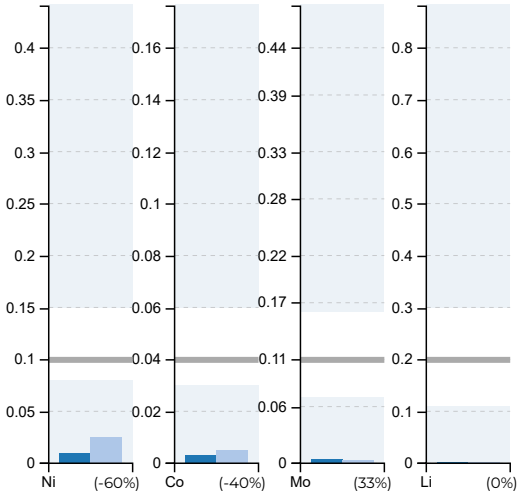

| Calcium | Magnesium | Sodium | Potassium | Iron | Copper | Manganese | Zinc | Chromium | Selenium | Phosphorus |
|---|---|---|---|---|---|---|---|---|---|---|
| **Curr: 63.0** | **Curr: 10.0** | **Curr: 37.0** | **Curr: 12.0** | **Curr: 0.8** | **Curr: 0.7** | **Curr: 0.016** | **Curr: 14.0** | **Curr: 0.030** | **Curr: 0.086** | **Curr: 18.0** |
| Prev: 126.0 | Prev: 15.0 | Prev: 22.0 | Prev: 12.0 | Prev: 0.5 | Prev: 1.1 | Prev: 0.013 | Prev: 16.0 | Prev: 0.029 | Prev: 0.069 | Prev: 22.0 |

## Toxic Metals



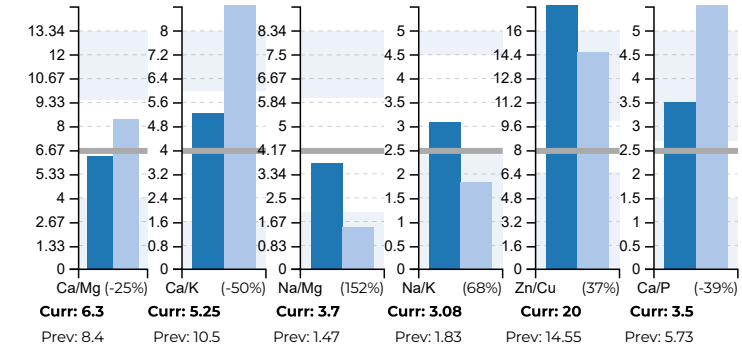

| Lead | Mercury | Cadmium | Arsenic | Aluminum |
|---|---|---|---|---|
| **Curr: 0.006** | **Curr: 0.052** | **Curr: 0.001** | **Curr: 0.023** | **Curr: 1.04** |
| Prev: 0.010 | Prev: 0.019 | Prev: 0.001 | Prev: 0.006 | Prev: 0.49 |

## Additional Minerals




| Nickel | Cobalt | Molybdenum | Lithium |
|---|---|---|---|
| **Curr: 0.010** | **Curr: 0.003** | **Curr: 0.004** | **Curr: 0.001** |
| Prev: 0.025 | Prev: 0.005 | Prev: 0.003 | Prev: 0.001 |

## Significant Ratios




| Ca/Mg | Ca/K | Na/Mg | Na/K | Zn/Cu | Ca/P |
|---|---|---|---|---|---|
| **Curr: 6.3** | **Curr: 5.25** | **Curr: 3.7** | **Curr: 3.08** | **Curr: 20** | **Curr: 3.5** |
| Prev: 8.4 | Prev: 10.5 | Prev: 1.47 | Prev: 1.83 | Prev: 14.55 | Prev: 5.73 |

| | Ideal | Current | |
|---|---|---|---|
| Ca/Mg | 6.67 | 6.3 | Within range |
| Ca/K | 4.00 | 5.25 | Slightly elevated |
| Na/Mg | 4.17 | 3.7 | Within range |
| Na/K | 2.5 | 3.08 | Within range |
| Zn/Cu | 8.00 | 20 | Elevated |
| Ca/P | 2.5 | 3.5 | Elevated |

# Practitioner notes:

**4-Month Master Peace Zeolite Trial – Summary Review**
**Client: Patrick**

Patrick's most recent Hair Mineral Analysis shows clear signs of forward momentum. One of the most notable shifts is the **overall improvement in mineral absorption**, especially for key macrominerals and essential trace elements like calcium, magnesium, phosphorus, and selenium. These levels are moving closer to ideal ranges, reflecting a more open and responsive system that is no longer locked in chronic stress physiology.

Detoxification is also active and effective — toxic metals and irritating "amigo" minerals are being released, suggesting that Master Peace Zeolite is successfully supporting deeper tissue cleansing. Alongside improved adrenal ratios and strong anchor patterns, this places Patrick in a promising stage of biochemical rebalancing and repair.

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## ✅ Positives – Signs of Progress

**1. Improved Oxidation Rate – Energy Rebuilding**

- Shifted from *slow oxidation* to *mild slow oxidation*

→ This reflects a positive change in energy output and metabolic efficiency.

**2. Macrominerals Moving Toward Optimal Levels**

- **Calcium, magnesium and potassium** levels are more balanced and closer to ideal ranges
- **Phosphorus** levels are better which often indicates improved protein digestion and cellular energy
- **Selenium** has also increased — an essential antioxidant and thyroid co-factor

→ This overall trend reflects significantly **better nutrient uptake and digestive function**, showing Patrick's body is absorbing and using minerals more effectively.

**3. Adrenal Function Strengthening**

- **Na/K** ratio improved from 1.83 → 3.08
- **Na/Mg** increased from 1.47 → 3.7 (ideal: 4.17)

→ These shifts show adrenal resilience is building after a period of depletion.

**4. Detoxification in Motion – Toxic Metal & Amigo Release**

- Notable increases in **aluminum**, **mercury**, **arsenic**, **iron**, and **manganese**

→ This suggests effective elimination of metals that contribute to oxidative stress, mental fog, and nervous tension. Zeolite appears to be facilitating this release from deeper stores.

**5. Strong Anchor Patterns – Nervous System Rewiring**

- Presence of **10 anchor patterns**, including key minerals like potassium, iron, manganese, zinc, and selenium

→ These represent improved nervous system integration and structural brain support — often seen during deep healing phases.

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## ⚠️ Areas That Still Need Support

**1. Four Highs Pattern Present**
→ This pattern reflects an ongoing internal stress signature within a slow oxidation state. It can bring emotional reactivity or overwhelm — continuing to support grounding and emotional release is important.

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# 🧭 Summary and Recommendations

Patrick is showing meaningful biochemical recovery. Improved **mineral absorption**, **stronger adrenal ratios**, and active **toxic metal detox** all indicate that the body is no longer stuck in survival mode — it is healing, recalibrating, and clearing deeper residues of stress.

Master Peace Zeolite appears to be playing a valuable role in this process. With continued support for elimination pathways and nervous system regulation, Patrick is on track to move into a more resilient, grounded, and energized state.

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# RETEST HTMA

The best way to understand retests is to see them as 'the next step.' Improvements come in many shapes and sizes; even tiny changes on a Hair Mineral Analysis test can mean big things. Sometimes, people think they have not made many improvements, but they have. Remember, the test needs to be read as a story, and as a whole, focusing on one number, such as the copper level, is not the best way to view retests.

Retests are critical checkpoints on a program; retests are done to see how the body chemistry has changed over a certain period of time. Sometimes, there are significant changes on a test; sometimes, there are few. The most important thing is that you are moving forward, and even getting a retest in the first place is a big step forward toward your health goals.

For some people, they may feel worse on their. Most of the time, this is because people detox and go through healing reactions (Herxheimer reactions). At times, your personal healing program may need to be adjusted. One may have switched oxidation types, or a mineral ratio may have flipped. In these cases, old supplements may no longer be serving an individual (because often they have done their job), so new supplements are needed, or a change in the diet is required to balance out a person's mineral levels further.

As mentioned above, people often are 'dumping' a lot of heavy metals & toxic minerals, which can cause a person not to feel good. Again, this is a positive sign, as we want the metals released from the body. A large nickel dump, for example, on a test will often be the reason why someone may have been having negative thought patterns recently and even suicidal thoughts. This can make people think the program isn't working. It tends to put a person at ease when they realize it's not them with the negative thoughts. Instead, it was caused by a metal release, in this case, nickel.

Sometimes, it may appear people have yet to make much progress. In reality, they often have underneath; we can see this from slight changes on the test. Other people may have had a very stressful period where their body's energy was used up elsewhere. Some may not have committed too well to certain aspects of their healing program, which could hold them back a little. Whatever the situation is, as we say, all we care about is 'the next step,' which is what's most important.

## Positive Patterns ✔

Any pattern that is in a **GREEN** color and has a tick icon (like above), we call **POSITIVE** patterns. If you have a positive pattern on an initial hair test, usually this is because one feels optimistic about starting a new healing program and/or something in their life is going in a positive direction for them.

However, positive patterns are the most important on **retests**. Please focus on these patterns, as they are strong indicators of positive healing changes.

Because positive patterns can be HTMA patterns, single minerals, toxic metals dumps, and others, they are spread out within the report. Please look out for them.

## Priorities and focus points

It can often be overwhelming to know what to focus on and what patterns take priority on tests. I like to call these patterns 'overriding themes'; this means that these particular patterns often take precedence over others. It may be that a person is in four lows, or they are dumping copper, for example.

When these patterns show, they tend to be overarching patterns or themes that a person is experiencing, going through, or needs to focus on. Therefore, it is these patterns that a person should focus on and prioritize to move through into more profound healing and health. For example, they may be in a lifestyle stress pattern, meaning that they really need to look at their external lifestyle stress and focus on how to resolve this to move forward. Or they may be dumping nickel, which generally means that they are probably feeling an overwhelming feeling of sadness or perhaps suicidal thoughts; this, then, tends to be the overriding theme or phase of the current test/journey of the person.

By showing priorities and focus points, we aim to help people navigate and understand which patterns are currently taking precedence and need focusing on more than others. It doesn't mean other patterns are irrelevant, but it helps people prioritize test result patterns a little easier.

Priority and focus point patterns will have a blue border around them just like this section. Look out for these sections and understand that these patterns tend to be overriding themes of tests taking precedence usually over others.

# THE OXIDATION RATE

The oxidation rate simply means how quickly the body burns food or how fast it converts food into energy. It is similar to metabolism. There are three types of oxidation rate. Slow, fast, and mixed. Extreme slow and extreme fast is not a healthy metabolism to be in. Most adults should be slow oxidizers, and most babies are fast. A healthy oxidation rate is mild slow or mild fast; however, most adults should ideally be mild slow. One of the biggest healing aims using Hair Mineral Analysis is to balance out the oxidation rate. By doing so, energy is released consistently over a long period, which means the person is much more stable, healthier, and happier.

**Brief oxidation rate summary**

If an oxidation rate is slow, a person feels very fatigued, lethargic, and depressed, and they often have malaise. They also often have sugar cravings, constipation, dry skin, and other problems. It is characterized by weak adrenal and thyroid glands, which often cause many of their symptoms.

If a person's oxidation rate is too fast, often the opposite occurs but in a very unhealthy way. A person's body is running too fast or too rich. It is like driving down the highway in the fast lane. It causes anxiety, irritability, paranoia, inability to feel relaxed, and other problems. Fast oxidizers tend to inflammation, high blood pressure, oily skin, and frequent bowel movements. An overactivity of the adrenal and thyroid glands characterizes fast oxidation.

Mixed Oxidation means the body sometimes acts like a slow oxidizer and sometimes a fast oxidizer. Often, it is a transitory period, and the individual will either fall into slow or move into fast.

## Your oxidation rate is MILD SLOW ✔

Mild slow oxidation is a good oxidation rate. You may experience some mild symptoms of slow oxidation below.

Those with a slow oxidation rate tend to be tired, apathetic, depressed, and even despairing and suicidal if their oxidation rate is very slow. If the copper level is also high, people can be quite emotional. Another symptom is anxiousness, although fatigue and depression are the most common. People in slow oxidation often use stimulant foods, drugs, or other methods to keep going.

Blood sugar and blood pressure tend to be low. Older people can often develop arteriosclerosis and diabetes. Slow oxidizers are often cold and do not sweat easily. Their brains often work slowly, and many have brain fog, spacey thinking, and slower thinking.

They usually have dry skin and dry hair, and many complain of constipation. They often gain weight on the hips and legs, while the upper body may be smaller. Most have underactive thyroid glands, especially women. They are prone to osteoporosis, cancer, infections, skin problems, and many other health conditions.

READ MORE HERE

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*Your previous oxidation rate was MILD SLOW*

# MINERAL RATIOS & PATTERNS

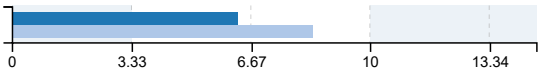
## The Calcium/Magnesium Ratio (Ca/Mg)

The Calcium/Magnesium ratio on a hair mineral analysis can yield a lot of extremely valuable information. It is one of the most important ratios on a Hair Mineral Analysis chart.

One can gather a lot of information from the Calcium/Magnesium ratio, such as cell solubility, bowel function, glandular interaction, and more. However, one of the most important points we can assess from the ratio is the current sugar and carbohydrate tolerance level the individual can handle. This is accurate up to a ratio of about 13:5. Above a ratio of 13:5, we have found that this is more of an indicator of lifestyle stress.

READ MORE HERE

| Mineral Ratio | Ideal Ratio | Current Ratio | % of ideal | Previous Ratio |
|---|---|---|---|---|
| Ca/Mg | 6.67 | 6.3 | 94.45 | 8.4 |




## You have a healthy Calcium/ Magnesium Ratio (Ca/Mg)

In general, the Calcium/Magnesium ratio is called the sugar ratio. A healthy ratio is a good sign that your body is currently tolerating sugar intake well at the moment.

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## The Calcium/Potassium Ratio (Ca/K)

The calcium/potassium ratio is one of the very important ratios on a hair mineral analysis. Hair must not be washed at the laboratory at all for accurate mineral readings.

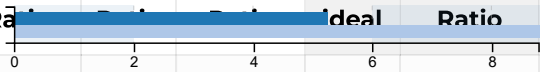
Dr. Paul Eck called this ratio the thyroid ratio. He used it to help determine the oxidation rate.

Thyroid glandular activity lowers calcium in the body. This is well known in medicine. Potassium sensitizes the tissues to thyroid hormone.

A Hair Mineral Analysis is not an indicator of a person's thyroid output. Rather it measures the thyroid hormone's effect on the cells. It can show how much thyroid hormone has managed to get into cells or how little.

This is quite powerful because many people for example may show low thyroid hormones in the blood. However their cell permeability may be high. Health practitioners often will give thyroid hormones to an individual if they are showing low thyroid hormones in the body, when in reality their cells may be very permeable if too much thyroid hormone is going into the cells. This can be a dangerous combination, that is one example of how Hair Mineral Analysis tests can be superior in areas to blood tests.

| Mineral Ratio | Ideal Ratio | Current Ratio | % of ideal | Previous Ratio |
|---|---|---|---|---|
| Ca/K | 4 | 5.25 | 131.25 | 10.5 |




## You have a slightly elevated Calcium/ Potassium (Ca/K) ratio

An elevated Calcium/ Potassium ratio is an indicator of reduced thyroid effect.

## Your previously underactive thyroid effect has sped up and therefore improved

This is a great sign that more thyroid hormones are finding their way into your cells creating a more balanced cellular hormone level. You will usually feel a degree of improved energy because of this. .

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## The Sodium/ Potassium (Na/K) Ratio

The Sodium/ Potassium ratio is arguably the most important ratio on a hair mineral analysis chart. It is the vitality ratio. It could also be called the electrical ratio and internal ratio.

It can help measure many things including.

**Adrenal strength**- Low Na/K= Low Adrenal Strength. High Na/K= Showing Increased Adrenal Strength.

**Electrical Potential of cells**. Low Na/K= A discharging of electrical potential. A High Na/K= Higher electrical charging or potential of cells.

**A movement indicator**. Low Na/K= Slowing of movement forward, exhaustion, and reversal of movement. High Na/K= Forward momentum, forward-thinking, more future-oriented.

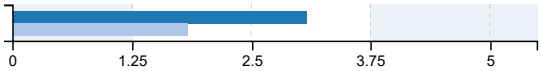
**An emotional indicator.** Low Na/K= Feeling stuck in the past, less optimistic, stuck in a hole. High Na/K= Future orientated, more optimistic, feeling more elated.

**And many more!**

A balanced Na/K in general means you are balanced in the indicators above.

READ MORE HERE

| Mineral Ratio | Ideal Ratio | Current Ratio | % of ideal | Previous Ratio |
|---|---|---|---|---|
| Na/K | 2.5 | 3.08 | 123.20 | 1.83 |




## Healthy Sodium/ Potassium (Na/K) Ratio

You have a healthy Sodium/Potassium Ratio.

READ MORE HERE

## Sodium/ Potassium (Na/K) has done a forward flip ✔

This is seen as a positive shift, signs of forward momentum and thinking.

A positive flip pattern usually indicates significant healing, often at a deep level.

The appearance of a flip over pattern can correlate with a change or shift in a person's mind or personality.

This is interesting, as it signals a relationship between a person's thoughts and feelings and a change in a major mineral ratio or oxidation rate.

For example, many people whose hair mineral retest show a flip over pattern report feeling differently about their lives, their attitudes, or perhaps have just retraced a trauma that has changed their life.

READ MORE HERE

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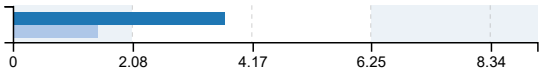
## The Sodium/ Magnesium (Na/Mg) Ratio

The Sodium/Magnesium (Na/Mg) is said to be the adrenal ratio. This is because the sodium level is related to adrenal gland output.

As a result the higher the sodium level the higher the aldosterone level because aldosterone regulates retention of sodium in the body.

However it is important to assess the whole HTMA chart to ascertain energy and adrenal output, this is because the sodium level can be propped up by certain toxins, including but not limited to cadmium, mercury, copper, iron and nickel. As a result the adrenal ratio may appear as if the adrenal glands and energy is high, however underneath the adrenal output is low because the sodium mineral has been pushed up or is temporarily showing higher because of a toxin dump.

| Mineral Ratio | Ideal Ratio | Current Ratio | % of ideal | Previous Ratio |
|---|---|---|---|---|
| Na/Mg | 4.17 | 3.7 | 88.73 | 1.47 |




## You have an mild low Sodium/Magnesium ratio

A low Sodium/Magnesium ratio is associated with sluggish adrenal gland out-put and energy. Your ratio is mildly low, as a result you may be experiencing symptoms of a mild low Na/Mg ratio such as; allergies, depression, fatigue, hypoglycemia, ineffective digestion (diminished ability to tolerate fats and meat protein), low blood pressure, low body temperature, salt cravings and weight fluctuations.

# THE FIRST FOUR MINERALS

Calcium, Magnesium, Sodium, Potassium

The first four minerals on a Hair Mineral Analysis Test are Calcium, Magnesium, Sodium and Potassium. We can gather a lot of information about a person's health and key supplement recommendations are often created from the first four minerals. The first four minerals represent a lot of what is happening on the surface of a person, both physically and mentally.

## Calcium Curr: 63.0 - Prev: 126.0

Calcium is a plentiful mineral in the body. It is the body's structural mineral, it allows us to stand upright in the world. Most of our calcium is in bones, teeth and nerves. When stressed calcium is one of the first minerals to leave the body. Most people need more bioavailable calcium to help them heal the body.

## Your Calcium is within healthy range

Your calcium is within a healthy range, however, it is slightly elevated, you may experience some issues with elevated calcium.

Elevated calcium symptoms may include fatigue, depression, defensiveness, muscle weakness, pain, arteriosclerosis, arthritis, kidney stones and gallstones. Others are bone spurs, rigidity, slow metabolism, constipation, social withdrawal and spondylitis (rigidity and inflammation of the spine).

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## Magnesium Curr: 10.0 - Prev: 15.0

Magnesium is one of the most important, if not the most important mineral in a human body. The reason being is that it is used in so many areas of the body. From osmotic balancing to cell membrane potential, to nervous system functioning, to hormone production and much much more. Magnesium is often chronically low in many people. Magnesium is a high energy mineral, it often contributes to the chronic fatigue pandemic that is currently sweeping the globe.

## Magnesium loss

When Magnesium is above 6mg% usually this is a loss of magnesium and needs to be replaced. This can be confusing as many people view hair analysis tests as high or low readings. This is never the case and a high magnesium in this instance is usually due to a loss of magnesium from the cells

If magnesium goes up by a large amount on a retest this can be seen as an "Amigo loss". The amigos are toxic oxide and carbonate forms of common minerals. Your test has not shown a drastic increase in magnesium and therefore is likely to be a loss, especially if one has been stressed recently.

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## Sodium Curr: 37.0 - Prev: 22.0

Sodium is the solubility and volatility element. It is found mainly outside the cells or extracellularly. Although sodium does not participate in a single enzyme in the body, it is the body’s great solvent, meaning it dissolves

many chemicals. It is also a major regulator of the fluid balance, pH and other fluid-related aspects of the body.

## High Sodium

High sodium or adrenal stress pattern- volatile, high stress, inflammation

An elevated hair sodium level is a feature of fast oxidation and an alarm stage of stress. The cause is usually higher aldosterone secretion by the adrenal glands. This may be due to acute stress or to emotions such as anger or fright. Cadmium and other toxic metals in the kidneys, along with kidney infections, can also raise the hair tissue sodium level.

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## Potassium Curr: 12.0 - Prev: 12.0

Potassium is a major electrolyte in the body. This means it is present in large quantities, and is required in large quantities in the diet. Potassium has a single electrical charge, also called a monovalent element. This makes it a good electrical conductor, a solvent, and tends to make it very water-soluble.

Potassium performs many essential functions ranging from regulating the heart to balancing the electrical potential of the body by polarizing the cells. In fact, one could call potassium the polarizer mineral.

## Your Potassium is within healthy range

# FIRST FOUR MINERAL PATTERNS

Below are the patterns on the first four minerals on a hair mineral analysis chart. Many of the patterns found on hair analysis tests are generated using the first four minerals, Calcium, Magnesium, Sodium + Potassium.

## Kidney Stress Pattern on a Retest

This pattern appears if sodium or potassium is above 30 and 12 respectively and the level has increased by 20% or more.

If an individual is following a corrective healing program well this usually indicates an increase in a biounavailable amigo which can include iron, aluminum, manganese, copper, cobalt, chromium and selenium. These irritate the kidneys and contribute to this pattern. When these toxins are elevated in the body they put extra stress on the kidneys and tend to raise the sodium and potassium levels.

Many symptoms can be present depending on the toxin stimulating the kidneys, however common symptoms are irritability, difficulty sleeping, frequency urination, dry mouth and eyes.

## You are in a Four Highs Pattern

Two patterns superimposed. Four highs is a combination of two components:

1. The high calcium and magnesium indicate an underlying slow oxidation or exhaustion pattern.

2. Superimposed on this pattern are high sodium and potassium readings. These indicate an alarm reaction, or fight-or-flight reaction occurring at the same time.

The combination indicates what may be called a **secondary alarm reaction**. Extraordinary stress of some kind is causing a partially effective stress response in a slow oxidizer. It is not unlike a second wind that runners may experience after they have run part of the way through a race.

The pattern is also called a slow oxidizer under stress. This term is applied because in essence one is a slow oxidizer. However, some type of stress is present that is causing elevated levels of sodium and potassium.

Most people are very uncomfortable in a four highs pattern and feel better when they come out of the pattern. However, a subset of people like the pattern, perhaps because they like a balanced oxidation rate and they have learned how to keep it balanced. There individuals are often delicate souls, because they are quite sensitive to their oxidation rate and will go to some length to keep it fairly balanced in a four highs pattern.

These people are often somewhat depressed and angry underneath, and do not want to face the depressing feelings that often accompany a significantly slow oxidation rate.

READ MORE ABOUT FOUR HIGHS

# OTHER HAIR MINERAL ANALYSIS PATTERNS & MINERAL PATTERNS

There are many other hair analysis patterns not only concerning the first four mineral patterns. Extra patterns and other notable mineral patterns are shown below.

## Copper

Copper is often a much talked about mineral in healing. The reason being is that it is often the cause of a plethora of symptoms.

People can be copper toxic, copper deficient or have biounavailable copper.

Having biounavailable copper is often the most common, usually what happens in this situation is that copper is in excess in the body, however the body doesn't produce copper binding proteins too well like ceruloplasmin and metallothionein. Without these proteins copper is not transported around the body easily and often gets accumulated in the body. This can give rise to both copper toxicity symptoms and copper deficiency. That's why it is super important to create a healing program for copper imbalances based upon a Hair Mineral Analysis as only then it is possible to see whether an individual is either copper toxic or deficient or both.

Copper imbalance symptoms include, racing mind, spaciness, detachment, anxiety, fear, depression, PMS, skin problems including rashes, acne, eczema, easy bruising, insomnia, bi-polar, schizophrenia, ovarian cysts, scoliosis, migraines, panic attacks and many more.

An ideal range of copper in the hair is about 1.5-2.5 mg% or about 15-25 ppm. Any number higher than this tends to indicate excessive copper in the hair tissue and, by extension, in other tissues of the body. A hair copper level of less than about 1.5 mg% usually indicates hidden copper toxicity.

Note that the hair must not be washed at the laboratory for accurate results. Only two labs in the United States, Analytical Research Labs and Trace elements, Inc, do not wash the hair at the lab, as far as I know. This means that if you have got a report from a different lab than these 2 then you may unfortunately have inaccurate results.

### Notes on copper supplementation

Assessing the need for copper supplementation. A need for copper supplementation does not mean the entire body is low in copper. It just means that some is needed to balance the chemistry at a particular time. This is confusing, but it works well. Dr. Paul Eck researched this subject thoroughly. Following are hair tissue mineral analysis indicators for a need for copper supplementation:

1) A fast oxidation rate.**X**

2) A hair sodium/potassium ratio less than about 2.5:1. **X**

3) A hair calcium/magnesium that is less than about 3:1 is a secondary indicator and it only applies if the hair sodium/potassium ratio is less than 2.5:1. **X**

If the copper level is in a good range between 1.5% and 2.5% there may still be some hidden copper indicators, this is indicative of excess stored copper hidden in various tissues such as the liver, kidneys, brain and others. However with people in fast oxidation a low copper level is usually more indicative of a need for extra copper supplementation. Your current copper level is

0.7

# Hidden biounavailable Copper (aka Copper Toxicity)

Often when people are sick. Their body adrenal glands are weak and their liver is congested. The adrenal glands send signals to the liver to create copper binding proteins such as ceruloplasmin.

The list of hidden copper indicators on your test is below.

READ MORE HERE

**Copper on a hair analysis is often not an accurate measurement of copper load/copper biounavailability. However, we know over 30 indicators of hidden biounavailable copper that has accumulated in tissues. Below are all of the hidden copper indicators on your test. In general, the more indicators you have, the more copper toxic you are.**

Hidden Copper Toxicity X1 - Copper less than 1.5mg%

Hidden Copper Toxicity X1 - Mercury is high

Hidden Copper Toxicity X1 - Slow oxidation with a copper level less than 1.0 mg%

Hidden Copper Toxicity X1 - Four Highs Pattern

## The number of copper toxicity indicators you have is 4 of 23

*The number of previous copper toxicity indicators you had was 5 of 23*

---

PRIORITY & FOCUS POINT

## Adrenal Burnout

Adrenal burnout is a very common problem in the modern world. Unlike adrenal fatigue, burnout is a more long term derangement of the adrenal glands that may take longer than a couple of weeks of rest. When the adrenal glands are burned out most people feel chronically fatigued, sometimes in the extreme. This is often coupled with depression because you need energy to feel upbeat. When the adrenal glands are weak this in turn often puts other areas of the body under strain such as the liver, pancreas, and detoxification pathways indirectly causing other symptoms.

READ MORE HERE

**There are quite a few indicators on a hair mineral analysis test that indicates a person is in adrenal burnout. Below are all of the indicators of adrenal burnout on your test. Every x1 means an increase in the severity of adrenal burnout.**

Adrenal Burnout X2- 6 or more poor eliminator patterns

# The number of adrenal burnout indicators you have is 2 of 10

*The number of previous adrenal burnout indicators you had is 3 of 10*

---

PRIORITY & FOCUS POINT

## Amigos have increased ✔

"amigo dump" –iron, manganese, aluminum have all increased. The amigos or irritants are oxidants in the body and can cause any imaginable symptom

Removing these can cause a huge amount of symptoms, in general. Aluminum causes a lot of forgetfulness and brain numbness. Iron can cause anger and irritability, and manganese can literally make you feel 'mad'. Combining these three things together can feel turbulent at times, but it is very good to get them out!!

READ MORE HERE

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## Anchor Patterns ✔

Anchor patterns indicate improvement in the architecture or shape or the brain sulci in an area of the brain. They are all very positive patterns.

Current research is not sure why keeping the mineral levels the same or very close helps the brain. However, we surmise that the similar numbers provide stability needed to regenerate the nervous system.

READ MORE HERE

Below are the anchor patterns on your test.

### Potassium Anchor

Potassium anchor = Improvement in the sulci at the top of the head. This has to do with balance and other brain activities.

### Iron Anchor

Iron anchor = Improvement in the sulci in the back of the head involving language processing.

### Copper Anchor

Copper anchor = Improvement in the sulci on the top of the head. We are not sure of the exact brain activity involved.

### Manganese Anchor

Manganese anchor = Improvement in the sulci top of the head. We are not sure of the exact brain activity involved.

Zinc Anchor

Zinc anchor = Improvement in the sulci in the back of the brain. We need more research about this anchor

Chromium Anchor

Selenium Anchor

Lithium Anchor

Molybdenum Anchor

Cobalt Anchor

## The number of anchor patterns you have is 10

---

## You have a wise person anchor pattern (9 or more anchors)

✔

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## Iron

The roles of iron are crucial in the body. Iron is an essential mineral with key functions such as transporting oxygen, facilitating energy production in the electron transport system, and supporting enzyme systems like catalase.

Despite its importance, iron overload is common and can be found in various foods. Iron toxicity is a serious concern and can contribute to conditions such as diabetes, heart disease, arthritis, inflammatory conditions, oxidant damage, Alzheimer's disease, cancer, chronic infections, hair loss, hypothyroidism, hyperactive behavior, violence, attention deficit disorder, and other health issues.

Contrary to traditional beliefs, recent research suggests that iron overload may occur without a hereditary condition or obvious reasons like blood transfusions. In a study on heart disease, 13% of those screened showed indicators of iron overload, not solely explained by heredity.

Eliminating toxic iron from the body is challenging. Based on clinical practice, it's assumed that most adults have some level of toxic iron, which tends to worsen with age. The best way to reduce iron toxicity is through a mineral balancing program.

Biounavailability of Iron may lead to misleading results in iron testing, where levels appear low when they are actually normal or high. Iron accumulation is particularly seen in the liver, associated with anger and rage in Chinese medicine, and in the amygdala, a brain region linked to these emotions.

Eliminating iron is challenging due to its essential nature, and the body conserves iron carefully. While historically low-iron diets were essential for survival, the modern world faces an excess of iron from various sources, including diet and environmental exposure.

Biologically available copper is vital for iron conversion and incorporation into hemoglobin, one of the main reasons why many people have issues with Iron availability, the real issue is copper imbalances. Copper anemia, often misdiagnosed as iron deficiency anemia, is linked to copper imbalance. Despite similarities, iron supplementation does not completely correct this type of anemia.

However if a person has been diagnosed with anemia or has very low blood iron results it can be useful to supplement a chelated iron or liver because the symptoms of very low iron are very unpleasant.

# Hair Mineral Analysis and Iron

Hair tissue mineral analysis is helpful to identify excess iron imbalances in most cases, but one must not just use the hair iron level. Here are the main indicators, positive indicators are shown with a blue tick:

- A hair tissue iron greater than 2mg%: This indicator applies mainly to an initial hair mineral test, though not necessarily. On a retest, during a mineral balancing program, the hair iron often elevates as the body eliminates excess iron through the hair, so the indicator is less reliable on retests. **X**
- Iron in the poor eliminator range: This is a hair tissue iron level of less than 1.2 mg%. A poor eliminator pattern indicates the body is having difficulty eliminating iron. ✓
- Other elevated "Amigos" such as manganese and aluminum, in most cases: When aluminum is elevated or manganese is elevated in the hair tissue, iron toxicity with biounavailable iron is almost always present.
- Aluminum is greater than 0.4% ✓
- Manganese is greater than 0.04% **X**

'Amigos' in the poor eliminator range: This means that aluminum or manganese, usually, are very low in the hair.

- The poor eliminator range for aluminum is when it is less than 0.08 mg% **X**
- The poor eliminator range for manganese is when it is less than about 0.02 mg%. ✓

READ MORE HERE

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# Zinc

Zinc is an essential and intriguing mineral required for numerous bodily functions. It plays a crucial role in supporting diverse functions ranging from vision, hearing, and skin health to hair, nails, connective tissue, sexual function, digestion, and immune response.

In addition to these functions, zinc is integral to protein synthesis and is necessary for various critical enzymes involved in RNA and DNA synthesis, including RNA transferase.

## A Worldwide Zinc Deficiency

The availability of bioavailable zinc is scarce today due to several significant reasons:

1. Most of the world's soils are deficient in zinc, posing a severe global issue. There is a lack of adequate zinc replenishment in today's agricultural practices.
2. Modern hybrid crops yield more food per acre but have significantly lower zinc content compared to non-hybrid varieties from the past.
3. Food refining and processing practices lead to the removal of zinc, especially in staple foods like wheat, rice, corn, sugar, and salt. This results in a diet based on refined and nutritionally depleted foods.

Natural sea salt provides a small amount of zinc, but this and other trace minerals are removed in refined table salt, making it a low-quality food option. Additionally, some frozen foods, particularly vegetables and meats, are treated with EDTA to preserve color, which further depletes zinc content, contributing to their negative impact on health.

Most newborns have low zinc levels because their mothers are deficient in zinc, leading to inadequate zinc transfer during pregnancy. Vegetarian and near-vegetarian diets also tend to be lower in zinc, as meats, especially red meats, are primary sources of this mineral. Stress can rapidly deplete zinc levels, and certain life

stages and conditions, such as childhood, puberty, pregnancy, breastfeeding, old age, stress, infections, and chronic illnesses, increase the body's demand for zinc.

Specific conditions, such as diabetes, require higher zinc intake. A noticeable example is the slower growth in height of boys compared to girls during puberty, attributed to zinc being utilized for the development of the prostate gland and testicles. White spots on fingernails during stressful periods also indicate significant zinc deficiency.

Considering all these factors, zinc deficiency emerges as a prevalent and critical issue worldwide, necessitating attention and action.

## Zinc in HTMA

The zinc content in human or animal hair samples is influenced by numerous factors, making it a crucial mineral to analyze in hair. However, it is important to note that the hair zinc level does not necessarily reflect the total zinc content in the body. Additionally, based on our experience, hair zinc levels are not a reliable indicator for determining the required amount of supplemental zinc for an individual. Therefore we can use other indicators on a HTMA test to understand the level of zinc load/deficiency within the body.

Dr. Paul Eck discovered that the sodium/potassium ratio obtained from a properly conducted hair mineral analysis is the most accurate method to evaluate zinc requirements. He also advocated for additional zinc supplementation in certain cases.

Regarding the ideal hair zinc level, an ideal Zinc level is 15 ppm However, it is crucial to understand that even if the hair zinc level appears normal, zinc supplementation is still necessary for everyone.

Occasionally, a low hair zinc level may be the body's response to a low sodium level or a low sodium/potassium ratio, as it attempts to defend itself or compensate for these imbalances.

Your Zinc level is currently in an OK range on the HTMA, however as mentioned above this does not mean that your total Zinc load is adequate. Please refer to the Zinc deficiency indicators below.

---

# Zinc deficiency markers

A more accurate way of assessing Zinc levels on a HTMA is to look for Zinc deficiency markers. Below are all of the zinc deficiency markers on this report. Positive markers for Zinc deficiency will show with a blue tick ✓

- 1. Zinc level less than 12 mg%. X
- 2.A copper level greater than about 2.6 mg%. X
- 3. A cadmium level greater than about 0.01 mg%. X
- 4. A mercury level greater than about 0.06 mg%. X
- 5. A zinc/copper ratio greater than about 12:1. ✓
- 6. A zinc/copper ratio less than 6:1. X
- 7. A sodium/potassium ratio less than 2:1. X
- 8. You have elevated toxic metal(s)✓
- 9. You are in a four low pattern X
- 10. You are in a sympathetic dominant pattern X
- 11. You are in a calcium shell X

---

## Zinc dropped - Zinc has been replaced for healing

This means that the body is holding onto zinc in order to help heal and renourish the body. This is a positive change.

However if you have been particularly stressed recently zinc may have been used up. Also it is important to stress that sexual fluid loss in men severely lowers zinc levels, that's why we recommend a person to reduce sexual fluid loss as much as possible.

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## Low Selenium

Selenium helps to detoxify metals, especially mercury.

READ MORE HERE

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## Chromium is low

Chromium is a fascinating and important trace mineral. The word chromium means colored in Latin, and it is associated with yellow pigments used in paints.

Relation to other elements: Chromium is an activator and is opposite to zinc, which is a stabilizer. Chromium plays a role in proper sugar handling, a major fuel for our bodies.

Severe chromium deficiency today: Chromium deficiency is almost universal and worsens with age. It is linked to various ailments, including atherosclerosis, elevated serum cholesterol, fatigue, hypoglycemia, depressed growth, dysinsulinism or pre-diabetes, and possibly food cravings or sweet cravings.

Causes for chromium deficiency:

1. Congenital: Most babies are born deficient in chromium due to their mothers' deficiency.
2. Depleted soils: Chromium is low in the soil, reducing its presence in food.
3. Hybridization and the Green Revolution: Hybrid crops produce more tonnage but are lower in trace minerals like chromium.
4. Food refining: Refining wheat flour and rice removes significant amounts of chromium.
5. Digestion and utilization of carbohydrates: Chromium is required for carbohydrate digestion. Excessive carbohydrate and sweet consumption depletes chromium.
6. Iron enrichment: Excessive iron intake interferes with chromium absorption.
7. Digestive disturbances: Factors impairing digestion hinder chromium absorption.
8. Stress: Stress can deplete chromium levels.

Roles of chromium:

1. Glucose tolerance factor: Chromium compound required for blood sugar and energy levels.
2. Cholesterol regulation.
3. Other potential roles, such as DNA synthesis.

---

# TOXIC METALS/MINERALS

Elevated = your metal reading is HIGH

Increased = your toxic metal readings have increased from previous levels and you may be experiencing healing reactions as a result.

PRIORITY & FOCUS POINT

## 112.24%

## Aluminum has increased ✔

Aluminum is called the soft in the head mineral because it is associated with memory loss and dementia. Aluminum is a soft metal and a dangerous one. It is very common in the environment, and almost everyone shows some aluminum toxicity on their hair tests.

Usually when the body is removing aluminum a person can get forgetful. This will pass when the aluminum has been removed from the system.

READ MORE HERE

## Aluminum is elevated

Aluminum is called the soft in the head mineral because it is associated with memory loss and dementia. Aluminum is a soft metal and a dangerous one. It is very common in the environment, and almost everyone shows some aluminum toxicity on their hair tests.

**Sources of aluminum**

| | |
|---|---|
| 1. Drinking water.<br>2. Any food product prepared with "drinking water".<br>3. Table salt.<br>4. Anti-perspirants.<br>5. Vaccines and flu shots.<br>6. Hundreds of food products made with aluminum-containing baking powder.<br>7. Aluminum-containing antacids.<br>8. Clay-containing products sold mainly in health food stores. These include zeolite, bentonite, azomite, montmorillonite and kaolin. | 9. Food cooked in aluminum cookware.<br>10. Beverages in aluminum cans or cardboard containers, unless the container is coated on the inside. These beverages include soda pop, beer, juices and others.<br>11. Other foods such as processed cheese and bleached flour.<br>12. Cooking with fluoridated water increases the leaching of aluminum from aluminum pots and pans.<br>13. Cosmetics. Some cosmetics such as rouge, foundations and others contain aluminum that can be absorbed through the skin.<br>14. Skin remedies. Burow's Solution, which is aluminum acetate, is sold as an anti-fungal remedy.<br>15. All children today in the West are born with |

elevated aluminum. It is passed from mother to fetus during pregnancy through the placenta.
16. Natural sources of aluminum. These include some herbs, such as peppermint, spearmint and wintergreen. It also includes all salt, to some degree.
17. Aluminum that rubs off many common products. They include appliances, computers, pipes, tapes, insulation, and other items people touch that are made of aluminum.

READ MORE HERE

PRIORITY & FOCUS POINT

173.68%

## Mercury has increased ✔

Mercury may be called the mad hatters mineral. People who made raccoon skin hats in the mid 1800s in America and Europe developed mercury toxicity after a few years from rubbing mercury on felt to soften it. Many became mentally and emotionally deranged after a few years of working in the hat factories.

Dental fillings. “Silver” dental amalgam fillings are usually about half mercury. It is advised to try and get them removed, as the mercury will slowly leach out of them and into your body.

Hundreds of symptoms may be due to chronic mercury toxicity. The organ most affected is often the brain, and children suffer the most from many mercury-related disorders. Mercury may be a factor in increasing birth defect rates, autism and other developmental delays, ADHD and other learning disorders, anxieties, bipolar disorder, obsessive-compulsive behavior, panic attacks, neuroses and paresthesias.

READ MORE HERE

## Mercury is elevated

1. Mercury may be called the mad hatters mineral. People who made raccoon skin hats in the mid 1800s in America and Europe developed mercury toxicity after a few years from rubbing mercury on felt to soften it. Many became mentally and emotionally deranged after a few years of working in the hat factories.

2. Dental fillings. “Silver” dental amalgam fillings are usually about half mercury. It is advised to try and get them removed, as the mercury will slowly leach out of them and into your body.

3. Medications. Mercury is found in some prescription and over-the-counter remedies.

4. Dental Materials. Studies demonstrate that each time one bites down on a mercury filling, some mercury vapor, the most dangerous form of mercury, escapes.

5. Large Fish And Shellfish. Large fish that eat smaller fish concentrate mercury up to one million times. Tuna fish is the most common source. However, all fish are somewhat contaminated.

Other Sources. Many industries use mercury because it is cheap and has many excellent properties as a fungicide, an excellent electrical conductor and more. These industries include electronics, gold mining and the manufacture of paper, chlorine, adhesives, fabric softeners and waxes.

Among the hundreds of other common sources of mercury in our environment are bleached flour, a few Chinese herbs, cleaners including Ajax, Lysol, Comet, Derma Scrub, Dove Soap, Ivory Liquid, some bleaches, some cosmetics, dyes, paints, inks, embalming fluid, engraving supplies, exhaust fumes, fabric softeners, feeding tubes, felt, fertilizers and many more.

READ MORE HERE

PRIORITY & FOCUS POINT

## 283.33%

## Arsenic has increased ✔

Arsenic is called the "slow death" mineral because it causes rather vague symptoms that slowly poison a person. It affects the brain significantly, and perhaps should be called the dullness mineral because it causes mental dullness and apathy.

When you have high arsenic you feel a sense of 'darkness' and 'numbness' towards life. It also causes weakness, fatigue and malaise. It is quite insidious.

It can affect the cardiovascular system, especially the heart, it can cause chest pains, arrhythmias, heart flutters and more.

READ MORE HERE

## Arsenic is elevated

Arsenic is a common toxic metal. Many people have an excessive amount of arsenic in their bodies. It is somewhat difficult to detect and often causes vague symptoms such as weakness, fatigue and malaise. It also takes away a person's will to resist. For this reason, it can be called the slave mineral.

We also call arsenic the slow death mineral, because it causes rather vague symptoms that slowly poison a person. It affects the brain significantly, and perhaps should be called the dullness mineral because it causes mental dullness and apathy.

When you have high arsenic you feel a sense of 'darkness' and 'numbness' towards life. It is quite insidious.

**Sources of arsenic**

| | |
|---|---|
| 1. Some chicken and pig products.<br>2. Salt. Arsenic is added to some salt.<br>3. Herbs. Many herbs take up arsenic from the soil and from the water used to irrigate them.<br>4. Water supplies. Arsenic from agricultural use finds its way into most water supplies.<br>5. Fish and all seafood. Many lakes are contaminated | 8. Tobacco. Lead arsenate pesticide is commonly used on tobacco.<br>9. Treated and preserved wood.<br>10. Paints. Arsenic compounds have a yellow or greenish color, and may be in some paints of these colors.<br>11. Leather. Arsenic is used in tanning leather |

| | |
|---|---|
| with arsenic, which gets into the fish. A common symptom of eating fish contaminated with arsenic is stomach pain.<br>6. Some milk and butter.<br>7. Pesticide in wine and beer. | because it is an excellent preservative.<br>12. Mining. Arsenic is also used in mining operations.<br>13. A hardener. Arsenic may be added to other metals to make them harder and more corrosion-resistant.<br>14. Electronics. Some arsenic is used in transistors and integrated circuits.<br>15. Medical drugs. Arsenic was formerly used as a medical remedy for gonorrhea and syphilis.<br>16. Natural contamination. Arsenic can be a natural contaminant of some drinking water and soils. With this introduction, let us discuss more specific issues to do with arsenic. |

READ MORE HERE

# POOR ELIMINATORS

Definition. A poor eliminator pattern consists of an extremely low reading of either a toxic metal or one of the nutrient minerals. The criteria or cutoff point for a poor eliminator pattern is different for each mineral.

Definition of a very poor eliminator pattern. This occurs when the level of a mineral is even lower. It indicates even more hidden accumulation of the metal present.

**Below is a list of your poor eliminators and very poor eliminators. When you have a poor eliminator it is actually a sign that you are toxic in that metal/mineral but your body at the moment is not removing it. This is often because of poor detox pathways. After a while on a healing program you will often see a very low metal/mineral reading rise on a hair test as the detox pathways improve and elimination in the hair begins to occur.**

Nickel is a poor eliminator

Iron is a poor eliminator

Manganese is a poor eliminator

Chromium is a poor eliminator

Cadmium is a very poor eliminator

Lead is a very poor eliminator

Copper is a very poor eliminator

**The number of poor eliminators you have is 7**

*The number of previous poor eliminators you had was 7*

---

## The Mineral Method by Mineral Man

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https://www.youtube.com/channel/UCqSLACTblHPijEvyL05oOmQ

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