

HTMA INTERPRETIVE GUIDE

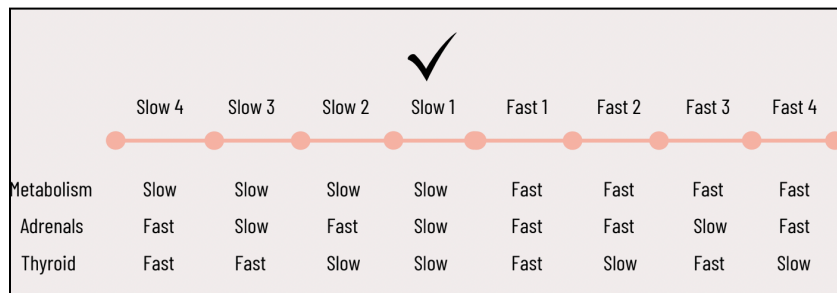
**Please see disclaimer located at the end of this document*

STEP 1: METABOLIC TYPE

Metabolic type: *Speaks to oxidation rate— Oxidation rate is the rate at which nutrients are converted into energy; the rate at which cells are burning or utilizing fuel.*

SLOW 1— Slow metabolism, adrenals, and thyroid

- Slower oxidation→ your body takes longer and requires more energy for your cells to take the nutrients from the foods you eat and turn them into energy



- **Resistance stage of stress on Hans Selye's General Adaptation Syndrome model**— body adapting and trying to maintain balance while stress continues. Energy demands are high and may see bodily systems compensating/adjusting due to demands. It's important to note that stress doesn't just mean *negative* stress...positive stressors can still place stress on the body, too. We know that you have been in the midst of a really busy/stressful work season, fertility journey, in addition to being a busy mother, friend, daughter, and beyond.

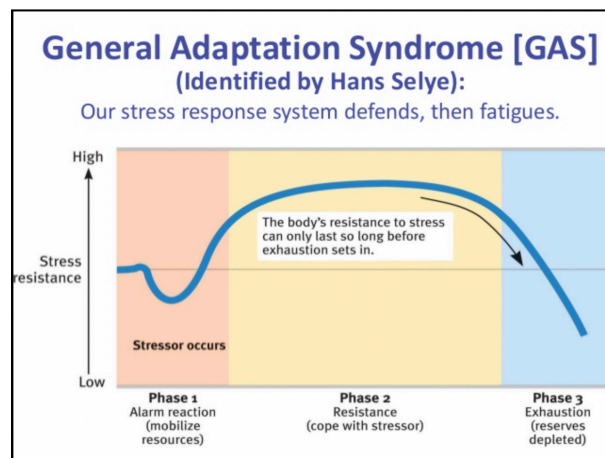


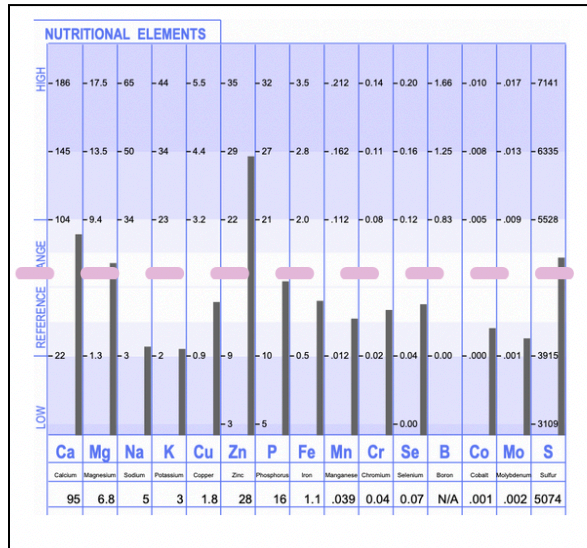
image credit to nursing path

STEP 2: VISUAL STRESS ASSESSMENT

*Minerals are necessary for the function of all enzymes and cell membranes (make transit in and out of the cell work!) Minerals support energy production, metabolism, digestion, detoxification, thyroid hormone uptake, hormone production, insulin sensitivity. Minerals are used heavily during times of **stress**. Repleting minerals is key to **resilience**.*

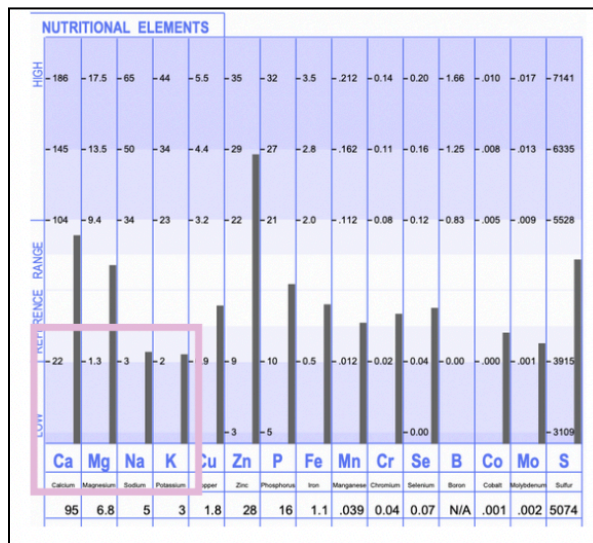
Minerals above midline = LOSS → active stress/fight or flight picture

Minerals in/below shaded area midline = Depleted → a chronic stress/depleted picture



STEP 3: FOUNDATIONAL MINERALS

There are four foundational minerals– Calcium, magnesium, sodium, and potassium. These set the tone for overall health and the function of different body systems. We always start with supporting foundational minerals.



CALCIUM– involved in nervous system regulation and is more associated with the parasympathetic state. Involved in maintenance of pH balance and healthy bones and teeth. *Excess*

tissue calcium also causes low GABA and serotonin, which can contribute to feelings of numbness/disconnection.

High– 95

- Feels like: constipation, fatigue, low mood, stiff joints, restless leg, hypothyroidism, kidney stones, may notice feelings of numbness/disconnection



MAGNESIUM– involved in thousands of enzyme reactions, supports the nervous system, aids in blood sugar balance and is necessary for energy production and vitamin D activation.

Slightly High– 6.8

- Feels like: high stress (high HTMA magnesium is correlated with a high magnesium “burn rate” or utilization rate)



SODIUM– regulates blood pressure, heart rate and is an important solvent. Necessary for stomach acid production. Regulated by the adrenal glands via aldosterone.

Low– 5

- Feels like: bloating/low stomach acid, low blood pressure, poor digestion, sluggish metabolism, low energy, headaches
 - Can contribute to uterine spasms, cramping, irritability, estrogen clearance issues
- Low sodium on an HTMA often signifies depletion and difficulty handling stress (even if you *think* you are managing well). Ideally, we have nervous system *resilience*– the ability to pendulate between different nervous system states without staying stuck in states of fight, flight, freeze.



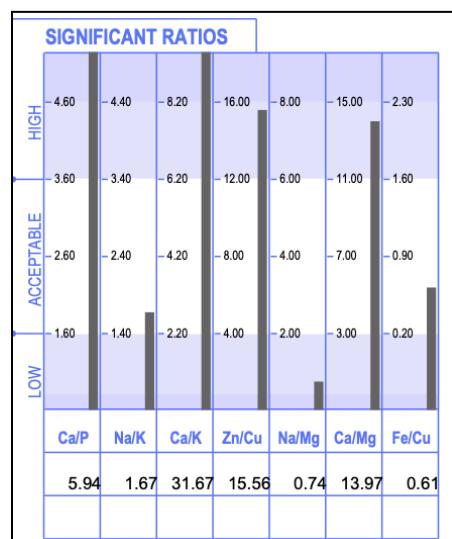
POTASSIUM– an important solvent, part of Na/K pump, plays a role in blood pressure regulation, heart contractility, pH and cell membrane function. *Potassium helps thyroid hormone and insulin get into the cells and do what they need to do. Needed to sensitize cells to T3.*

Low– 3

- Feels like: constipation, arrhythmias, low blood pressure, fluid retention, bloating, hypothyroid, sluggish energy, bowel changes

STEP 4: SIGNIFICANT RATIOS

These ratios help connect the dots between mineral relationships and different body systems. They can help the results tie into client symptoms really well!



Ca/P– The Nervous System Ratio– 5.94

- Ideal ratio=2.6
- Gives insight into the autonomic nervous system state and is what gives the metabolic type of slow or fast
- >2.6→ parasympathetic dominance, slow metabolism, stuck/depleted
 - May feel/look like freeze, shut down, withdrawal, emotional numbness, fatigue masked as calm
 - Metabolism down shifts to conserve resources
 - Energetic→ may show up as overly “yin”, depleted from over giving and under receiving, tired but wired, suppressing needs to keep up with life, detached from creative fire, sexual energy, soul desires

Na/K– The Vitality Ratio– 1.67

- Ideal ratio=2.4
- Gives insight into cellular vitality based on the ability to transport nutrients, glucose, hormones, etc. across the cell membrane (every cell in the body has an Na/K pump on the membrane– nothing exits or gets into the cell without this pump)
- <2.4→ chronic/long term stress, low energy/fatigue, adrenal burnout

Ca/K– The Thyroid Ratio– 31.67

- Ideal ratio=2.4
- Gives insight into the minerals that affect thyroid hormone production and cellular hypothyroidism
- >4.2→ **cellular hypothyroidism**
 - Very high→ could suggest your body may not be utilizing thyroid hormone well within the cells even if your body is making enough thyroid hormones themselves→ Cells less responsive to thyroid hormone, slowed metabolic function

Zn/Cu– The Zinc/Copper Ratio– 15.56

- Ideal ratio=8.0
- Gives insight into copper status/bio-availability. Can be skewed by hidden copper toxicity, zinc loss/contamination or bioavailability issues
 - **Loss of adrenal or nervous system reserves (zinc is a major adrenal supporter)**
- >8→ possible hidden copper toxicity, copper deficiency, or poor bioavailability

Na/Mg– The Adrenal Ratio– 0.74

- Ideal ratio=4.0
- Gives insight into adrenal activity
- <4→ **adrenal burnout**, chronic stress and low energy

Ca/Mg– The Blood Sugar Ratio– 13.97

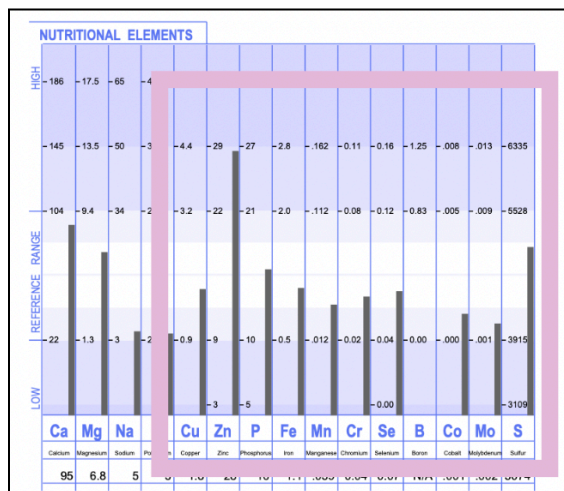
- Ideal ratio=7.0
- Gives insight into insulin sensitivity. Ca is involved in insulin release whereas Mg regulates insulin release
- >7→ suggests tendency for hypoglycemia

Fe/Cu– The Infection Ratio– 0.61

- Ideal ratio=0.9
- Gives insight into possible signs of infection, but must be confirmed with stool testing

STEP 5: SECONDARY MINERALS

We always focus on foundational mineral support and nervous system support, first. For that reason, this guide will not be reviewing all of the secondary minerals, however, I did want to include zinc here as we discussed this on our call today and we will be incorporating zinc and copper rich foods for further support.





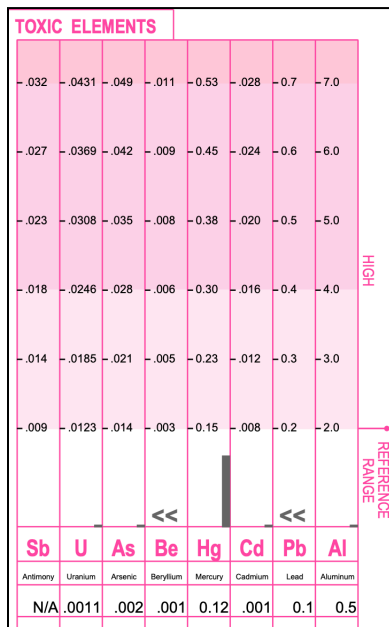
ZINC— involved in digestion (HCL/enzyme/bile production), supports immune system, component of insulin production, keeps hair/skin/nails healthy

High— 28 ruled out topical exposure from zinc-oxide sunscreens and anti-dandruff shampoos. High zinc can also be a “loss pattern”, sometimes common to see this if recently fought an infection. It is often a sign of inflammation (i.e. not digesting food well - inflammation in gut)

- Feels like: chronic infections, anemia
- **Loss of adrenal or nervous system reserves (zinc is a major adrenal supporter)**
- **Need to replenish**

STEP 6: TOXIC ELEMENTS

This section looks at levels of heavy metals in the hair. Since exposure is common, we should expect to see some low level amounts here (in the white section).



I want to point out the higher Mercury on your HTMA. Common sources of Mercury exposure include dental fillings, large fish, slow growing fish, shellfish, tuna, swordfish, fungicides, vaccines, tap water, wood preservatives, old thermometers, some lightbulbs, pharmaceuticals. Consider if any of these sources of exposure ring true for you. The best defense against heavy metals is supporting foundational minerals and opening up drainage/detox pathways. You will see tools to accomplish this in your actionables. Additional measures to take would be incorporating a binder, as appropriate.



*This resource serves as a source of educational content and should not be taken as personal medical advice/recommendations. For personalized guidance, you should always work directly with a healthcare professional familiar with your unique history and health status.

Embody Physical Therapy & Wellness, LLC ("Company") may offer Client information and education around specific supplements that have been associated with improved fertility, or that have been shown to affect or improve symptoms Client may be experiencing. Client understands and agrees that any such information and education is general information only, and is not meant as medical advice, nor is Company engaging in any kind of medical service or treatment by giving such information or general recommendations. Company cannot guarantee the effectiveness of any such information given to Client, or that any supplement or diet change may be right for Client or successful to Client.

Should Client elect to purchase any supplements that Company has recommended, or otherwise elects to incorporate or implement any supplements or diet changes from Company, Client will do so only after checking with his/her medical provider who has reviewed applicable medical records, and approved the supplement or diet change. Any choice of Client's to implement a recommendation, or to purchase a supplement from Company shall be a completely voluntary and independent decision by Client after consulting with a medical professional, and shall in no way create any liability on the part of Company. Client confirms he/she will not hold Company responsible for any negative reaction to result from any supplement or diet change disclosed by Company.