Accurately Assessing Mineral Status Using Hair Tissue Mineral Analysis (HTMA)

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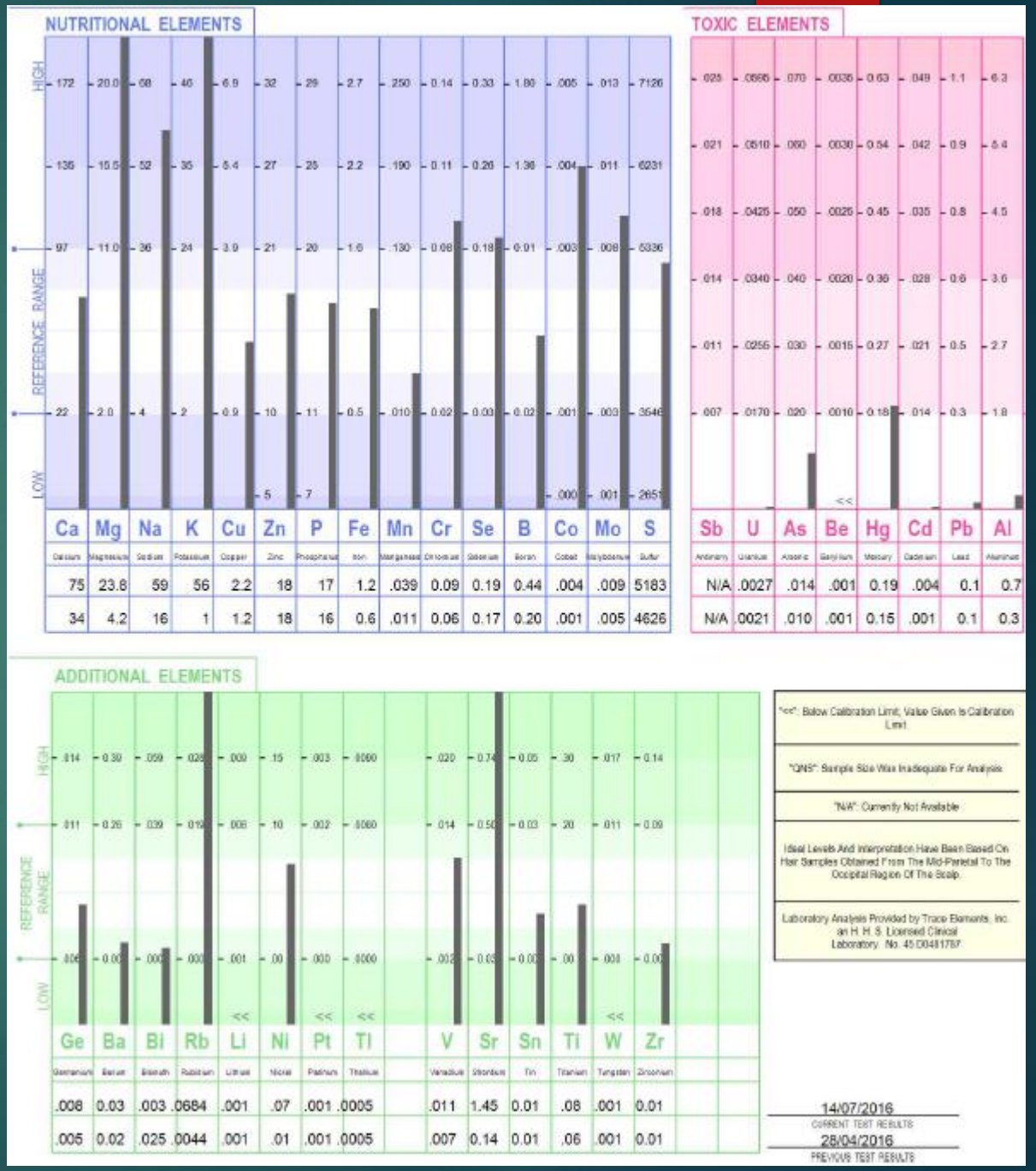
Disclaimer

The information in this presentation is not intended to replace a one-on-one relationship with a qualified health care professional and is not intended as medical advice. It is intended as a sharing of knowledge and information from the research and experience of Jamie Johnson and the experts who have contributed. We encourage you to make your own healthcare decisions based upon your research and in partnership with a qualified health care professional

BODY MIND TRANSFORM

Why HTMA?

- Relates stress, energy & minerals to understanding mind/body connection
- Provides overview of 36 nutrients in complex interrelated mineral system
- Economical gateway test alongside functional blood chemistry
- Assess potential heavy metal toxicity



Nutrient Minerals

- Play a major role in health functions – mind/body connection
- Involved in cellular energy production
- Regulate neuro-endocrine functions
- Henry Schroder, MD: “minerals are the sparkplugs of life”
- Must be obtained from outside the body – food or supplements
- Different nutrients have different effects on metabolism & ANS so need to use personalised approach to help restore balance
- Possible to detect mineral losses before they become chronic
- Critical to maintain adequate mineral levels in right ratio – mineral imbalances may account for at least 80% of health issues

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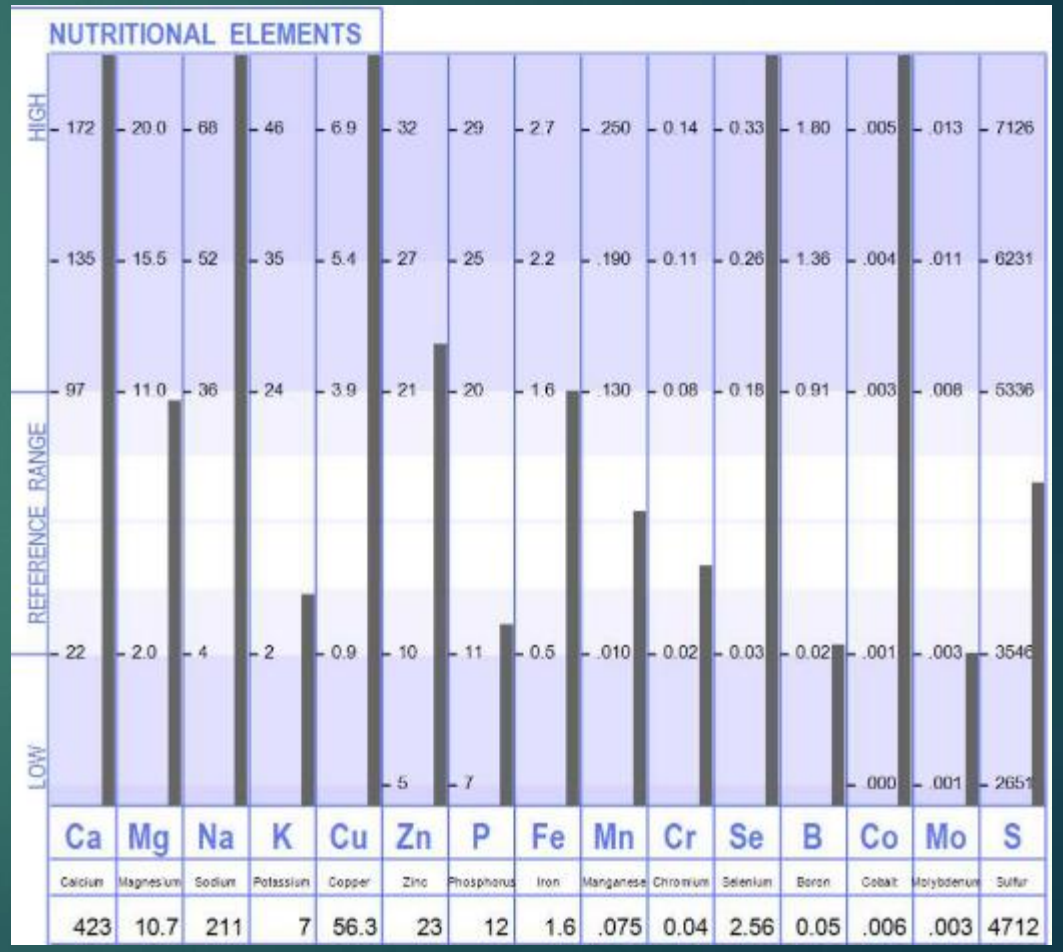
Why Do We Have Mineral Imbalances?

- Food quality
- Heavy metal/chemical toxicity
- Stress
- Lack of sleep
- Inappropriate level of exercise
- Trans-generational influences



Result Of Better Mineral Balance

- Improved health, performance & physical appearance
- Decelerated biological clock to promote healthy ageing
- Increased energy, vitality & focus
- More resilience in coping with stress
- Stronger immune system
- Improved mind/body connection
- More confidence in body & mind
- Sustained fat loss through optimising metabolism
- Pain reduction

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Allopathic Medical Model Health/Disease Dichotomy

- Either you're healthy or you have a disease
- Diagnostic tests based on statistical norms & extreme deviations from mean
- Medical model doesn't work well with HTMA data – JAMA have resisted it

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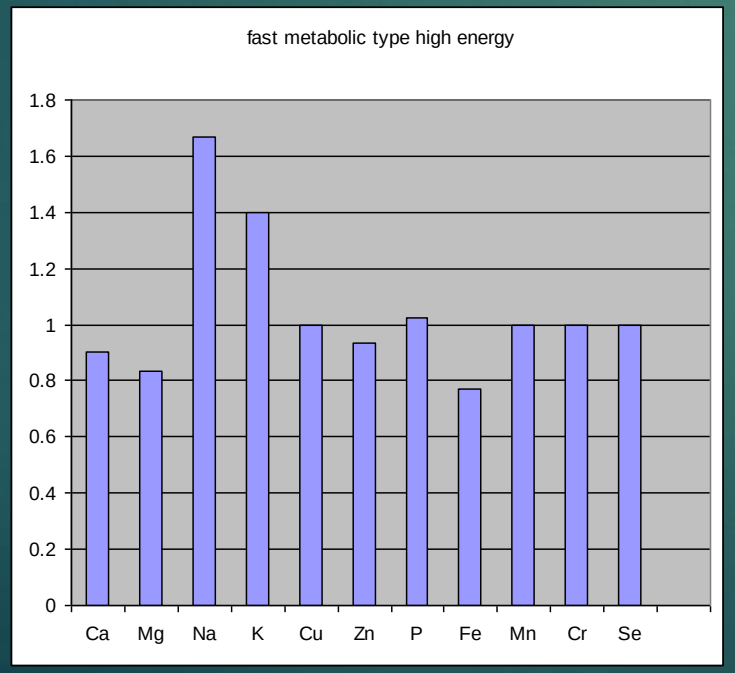
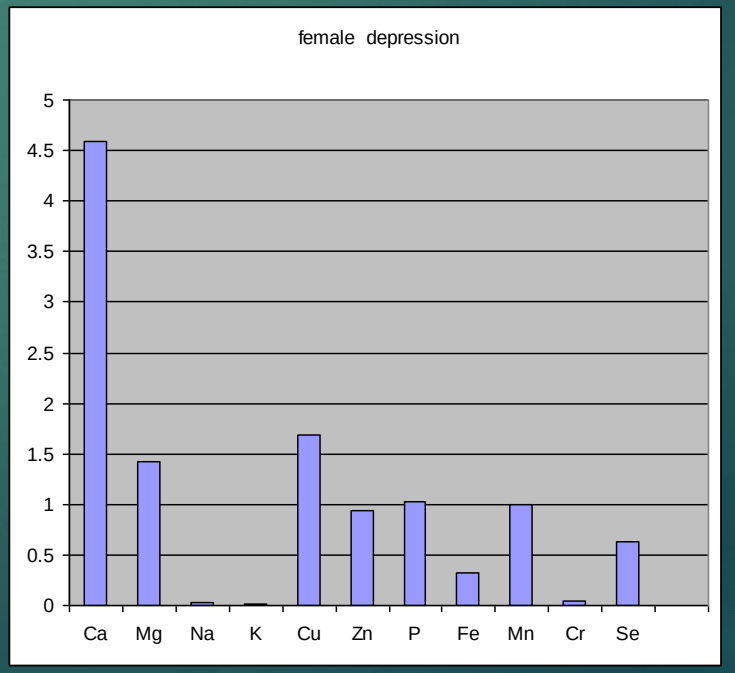
Health/Energy Continuum

- More energy a person has, more likely they will be healthy
- Less energy a person has, more likely they will be unhealthy
- HTMA provides an energy profile for a person
- Helps locate & monitor person's position on continuum





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HTMA Discoveries

- Beginning in 1975, Drs Paul Eck & David Watts broke the “code” of HTMA
- Minerals don’t deposit randomly in hair – form distinct metabolic patterns
- Nutrient minerals interrelated in complex dynamic regulatory system that changes over time
- One mineral can affect all other nutrient minerals
- Care in choosing individual nutrients is vital
- Close relationship between minerals & mind/body

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Advantages of HTMA

- Often detects mineral imbalances before blood tests
- Picks up early trends towards health issues showing how they can be reversed
- With precise ideal nutrient mineral levels it's easy to graph results
- Address critical mineral deficiencies & imbalances
- Need to think in terms of dynamic systems and have a broad perspective:
  - How are nutrient minerals interrelated?
  - How they change over time?
  - What changes mineral patterns?

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Mineral Balancing

- Even one nutrient can have profound effect on broader mineral system, starting a cascade of mineral changes within the body
- Detoxing copper or excretion of intracellular minerals can alter mineral ratios
- HTMA provides a guide to selecting essential nutrients to restore balance
- As minerals are restored, neuro-endocrine system becomes more resilient
- Mineral imbalances induced by stress can lead to chronic health issues

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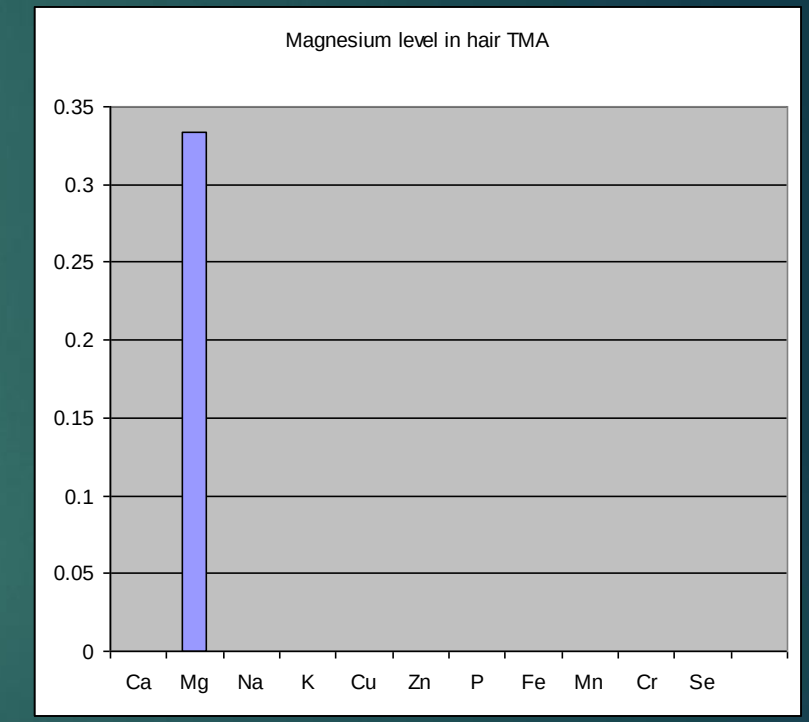
One Mineral In Isolation

- Doesn't reveal much information
- Doesn't show how it is relates to other minerals
- How would magnesium supplementation likely affect other minerals?



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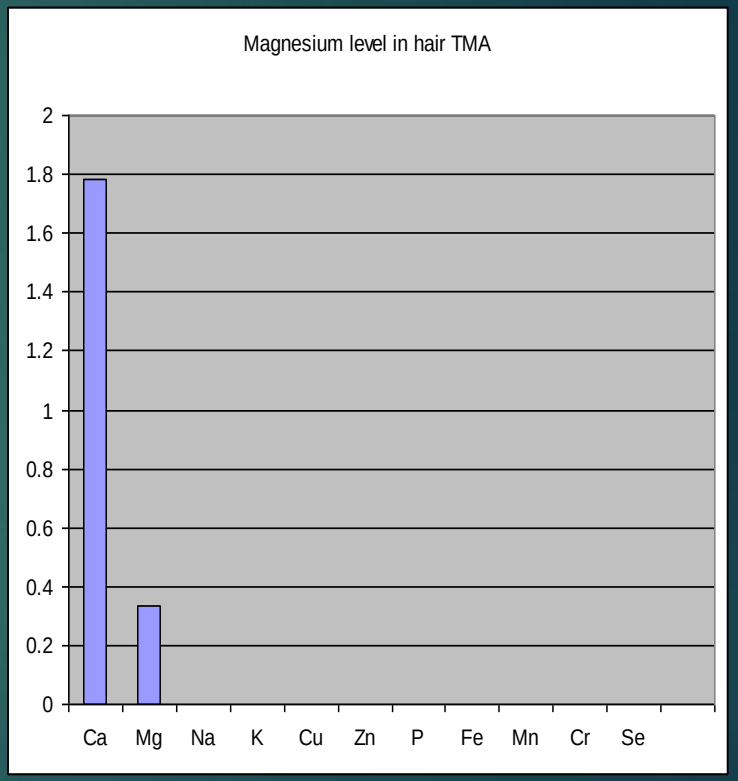
Adding A Second Mineral

- Reveals more information
- Shows how they are related to each other in ratio
- What effects would calcium or magnesium supplements have?



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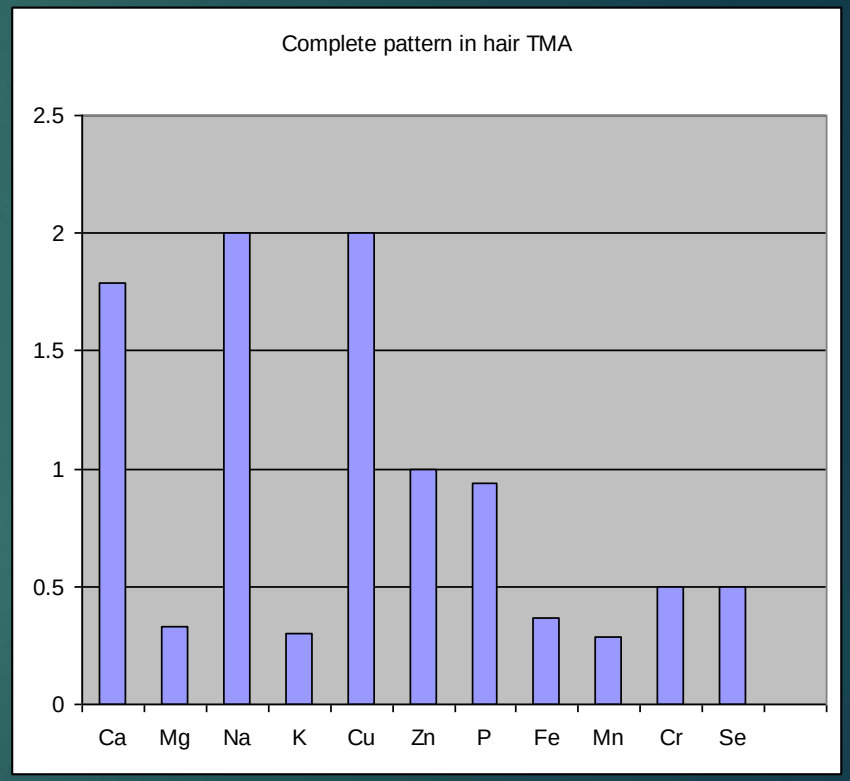
Complete Mineral Profile

- Broader pattern reveals much more information:
  - Na/K
  - Ca/Mg
  - Na/Mg
  - Ca/K
  - Zn/Cu
  - Ca/P
- Ratios depend on precise levels of key nutrient minerals – add valuable info



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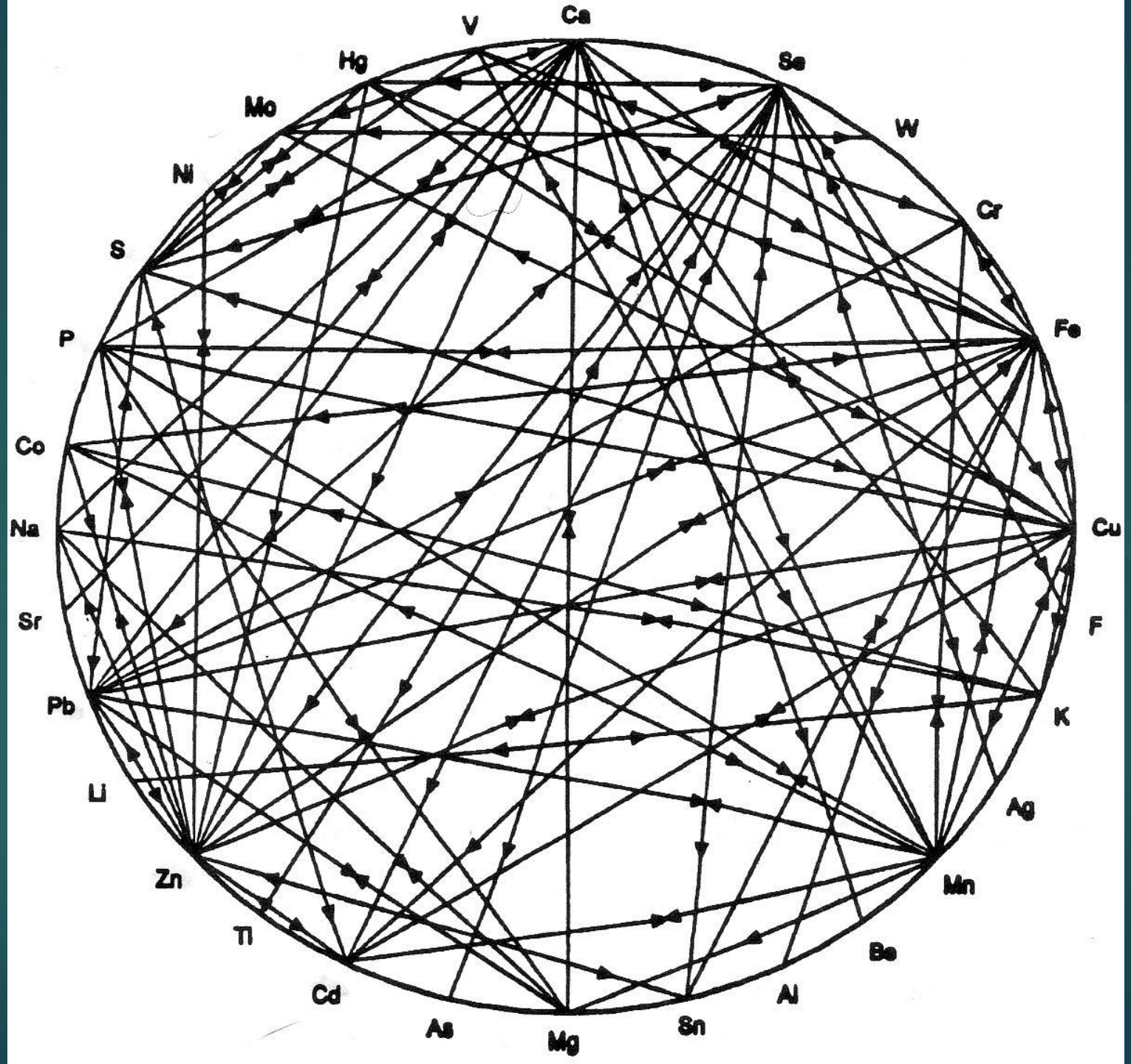
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HTMA Levels & Ratios

- Metabolic activity best reflected in SCALP samples – preferred source
- Pubic hair, chest hair, nails & other tissues grow at different pace but can be used as secondary screen to rule out contamination
- Phosphorus levels tend to be much higher in pubic hair samples
- LEVELS of nutrient minerals are very important, but perhaps even more important are RELATIONSHIPS/RATIOS between pairs of certain minerals
- Many of these minerals are involved in REGULATING important psychological and metabolic functions such as stress, blood sugar & blood pressure

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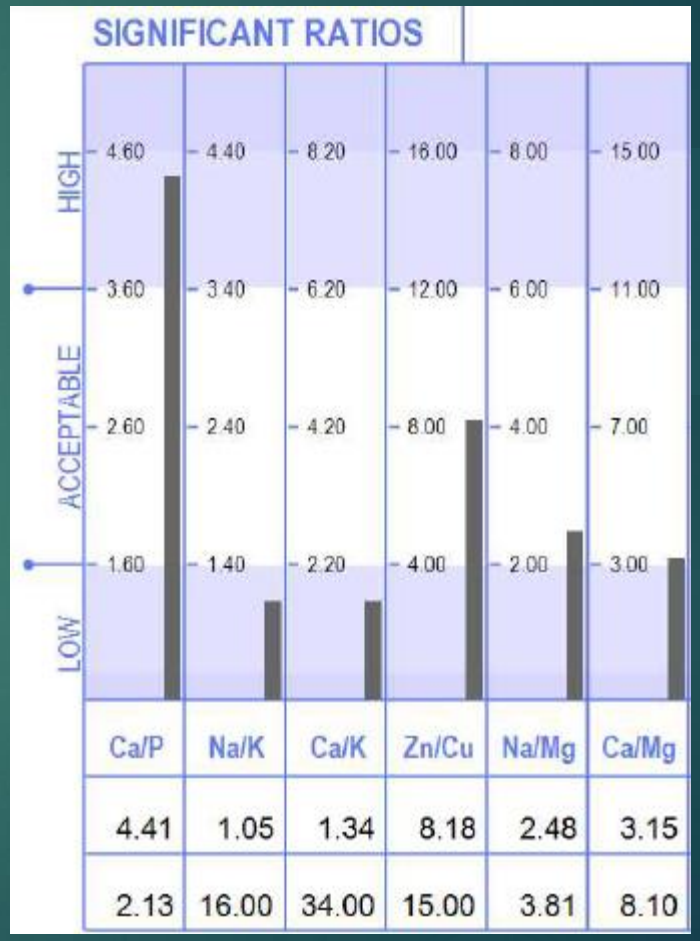
Ratios Reflect Antagonisms Between Minerals

- Ca/P (digestion)
- Na/K (stress)
- Ca/K (thyroid)
- Zn/Cu (sex hormones)
- Na/Mg (adrenals)
- Ca/Mg (blood sugar)



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Biochemical Individuality – Dr Roger Williams

- Infinite number of biochemical differences between people in terms of metabolism & biochemistry
- Challenging aspect of using nutrients is part of dynamic complex system
- Different people respond differently to same nutrient
- As individual's biochemistry changes over time their nutritional needs change
- Same nutrient may have different effects on same person at different times
- How do we simplify this concept to make it more meaningful and practical:
  - Hair Tissue Mineral Analysis (HTMA) – reflects dynamic mineral system
- Drs. Paul Eck & David Watts applied "biochemical individuality" to understanding HTMA data

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Functions & Effects Of Stress

- Stress response is reflex survival mechanism
- Affects us both physically & psychologically
- Stress response is ‘fight or flight” response
- “Fight” is anger or rage
- “Flight” is anxiety or panic
- Stress is major contributing factor in many diseases, esp inflammation

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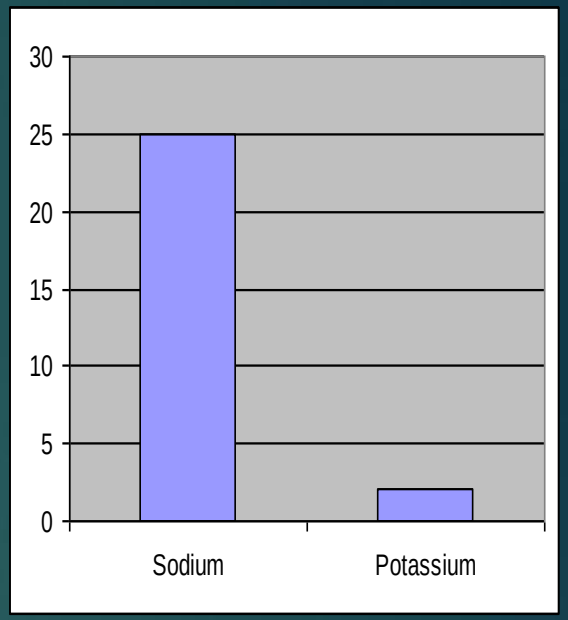
How Stress Shows In HTMA

- Stress impacts mineral levels – mental & physical health
- HTMA is profile showing how person impacted by stress
- Sodium is primary stress mineral – aldosterone
- As Na increases, both physical & psychological reactions occur
- Reflected in high HTMA "stress ratio" - Na/K
  - Increased inflammation
  - Higher magnesium "burn rate"
  - Zinc gets depleted which retains K & Mg in cells



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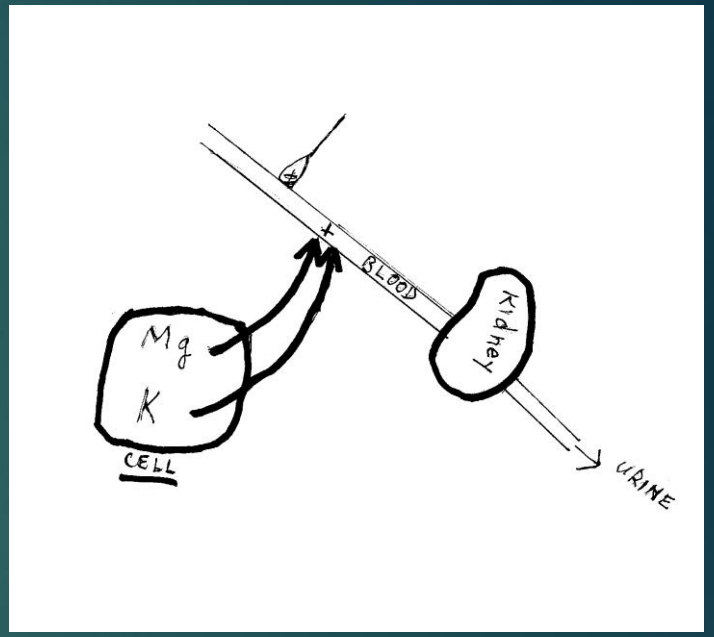
Mg & K Lost From Cells Under Stress

- Mg & K are primary intracellular minerals
- Under stress quickly lost in large quantities
- By moving out of cells, allows sodium to rise
- Rise in sodium accentuates stress response
- Mineral deficiency in cells
- Increases in blood temporarily
- Hair follicle picks up excess minerals – shows high in HTMA
- Blood carries lost minerals to kidneys – excreted in hair & urine
- Ca/Mg & Na/K ratio appear inverted



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Importance Of Magnesium

- Magnesium deficiency undermines health – epidemic
- Magnesium is nature's "calcium channel blocker", slows adrenals, regulates insulin release, vital for heart rhythm regulation
- Ca/Mg critical to cellular health & vitality – calcification leads to cell death
- High doses of calcium don't prevent osteoporosis, block magnesium absorption and create a magnesium deficiency
- Magnesium enhances calcium absorption, increases serum ionized calcium, promotes Ca deposition in bones & blocks Ca deposition in soft tissues
- Krebs Cycle (Mg-ATPase)
- "Active" vitamin D
- Detox pathways
- HMG Co-enzyme A
- Glutathione synthesis

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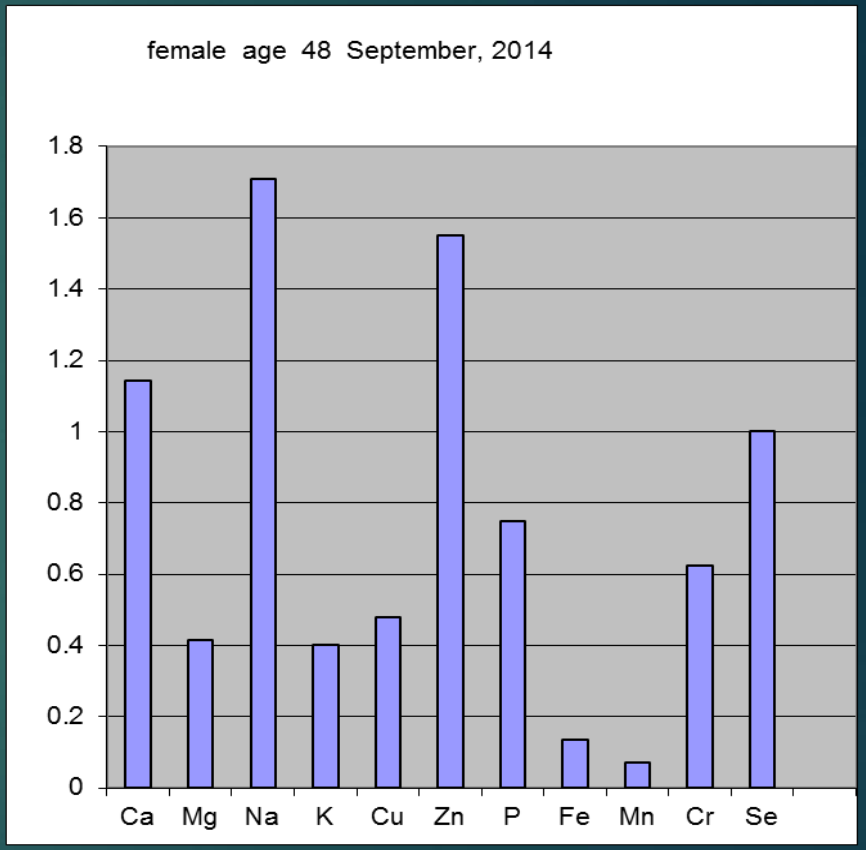
Stress, Magnesium & Heart Risks

- Since 1930s, known about importance of Mg for heart health – deficiency may lead to convulsions, cardiac arrhythmia & heart attacks
- Marginal deficiencies are associated with variety of other acute & chronic disorders including diabetes
- Mg-ATP factor is vital for providing heart with energy
- Intense stress (high Na/K ratio)
- Magnesium deficiency (high Ca/Mg ratio)
- High magnesium burn rate (MBR)
- Higher risk for sudden fatal heart attack



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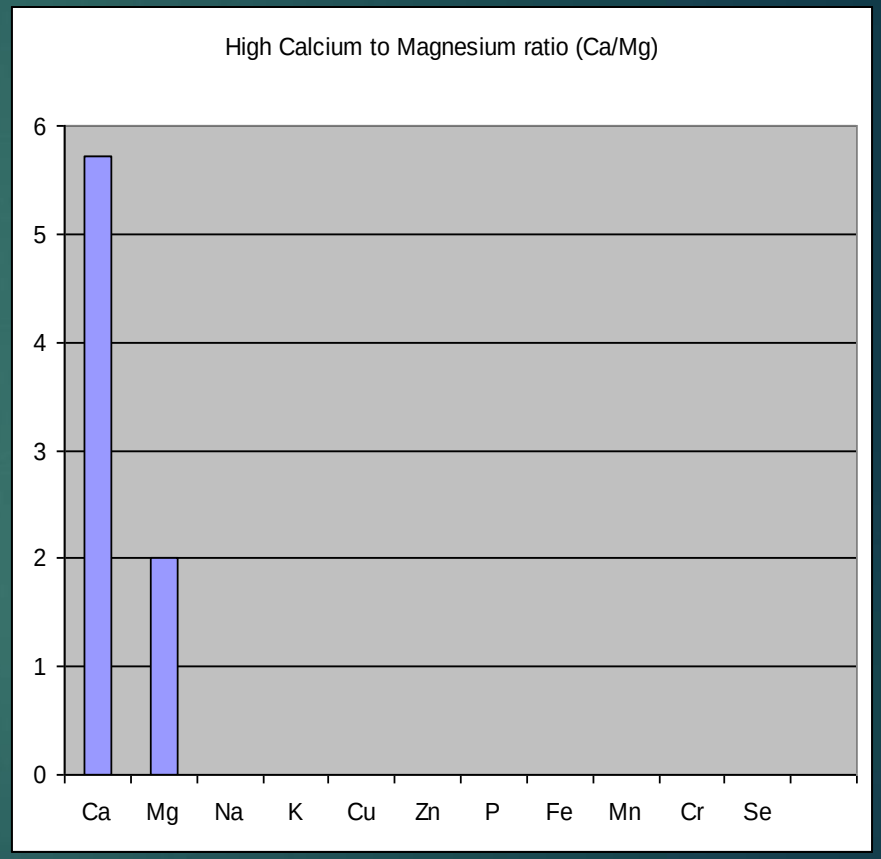
Symptoms Of Magnesium Deficiency

- Tight, spastic muscles
- Muscle twitches
- Unstable blood sugar
- Seizures, tremors
- Cardiac rhythm problems
- High blood pressure
- Transient Ischemic Attack (TIA)
- Headaches
- Anxiety, Depression
- Alcoholism, addictions
- Constipation

Mg Deficiency & High Ca/Mg Ratio

- Calcium contracts muscles
- Magnesium relaxes muscles
- High Ca/Mg ratio
- Spasms in muscles
- Tight tense muscles
- Raises insulin levels
- Increases heart attack risk
- Blood clots
- Arterial spasms
- Kidney stones



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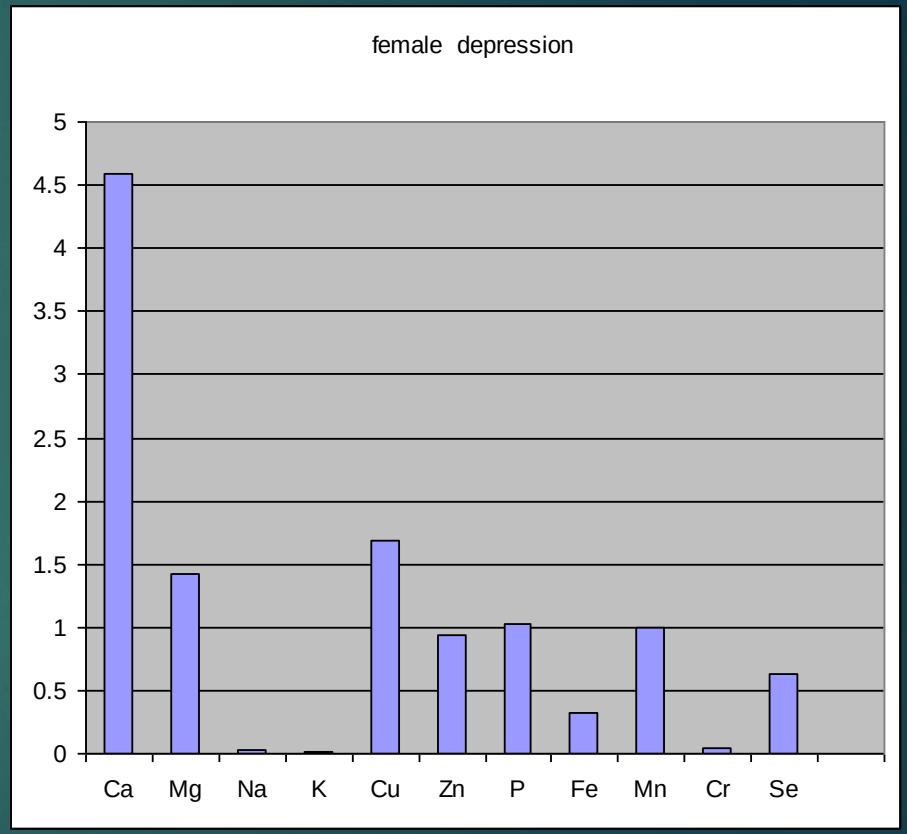
Assessing Magnesium Status

- RBC blood test
- HTMA – cell & tissue reserves and relation to other nutrient minerals
  - Absolute (level) or Relative (ratio) deficiency
  - Ca/Mg ratio (blood sugar)
  - Na/K ratio (stress)
  - Na/Mg ratio (adrenals) – may need to also give adrenal support with low Na/Mg



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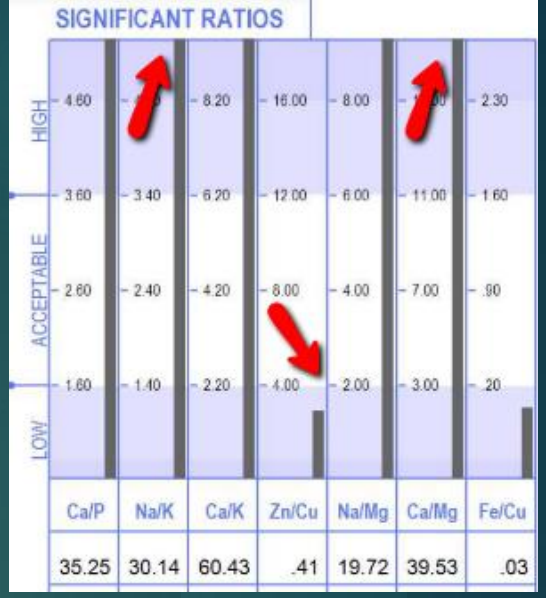
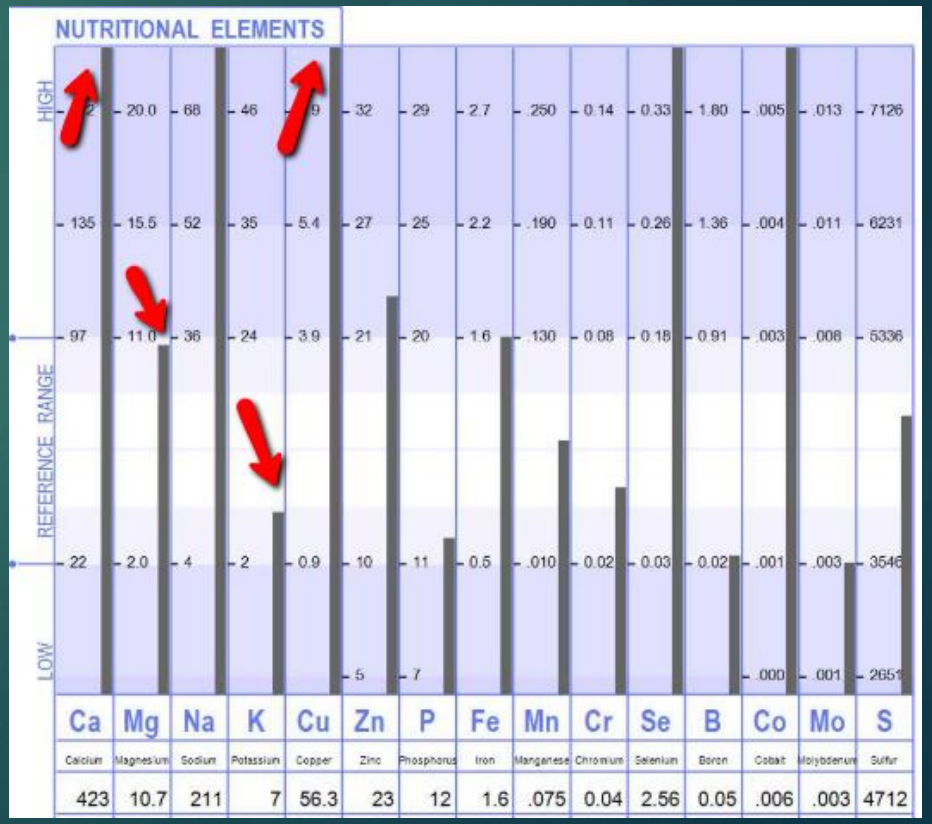
Estrogen, Copper & Stress

- Relationship between estrogen & copper
- Excess copper & estrogen produce both physical and psychological issues
- Copper is essential nutrient mineral vital for good health
- Copper needs to be at OPTIMAL amount
- Too much or too little copper is unhealthy
- Estrogen builds up too much copper in cells & tissues, mainly brain & liver
- Adequate adrenal gland activity is necessary to stimulate ceruloplasmin production in liver to bind to copper
- As copper increases:
  - Zinc decreases
  - Zinc/copper ratio decreases
  - Potassium decreases (K deficiency)
  - Na/K ratio increases (stress intensifies)
  - Magnesium decreases (Mg deficiency)
  - Ca/Mg ratio increases (affects insulin)





Copper Related Symptoms

1. PMS
2. Fatigue & exhaustion
3. Allergies
4. Mind is in a fog
5. Headaches, migraines
6. Mood swings
7. Supersensitive, weepy
8. Cold hands, and/or feet
9. Depression
10. Dry skin
11. Chocolate cravings
12. Feeling of loss of control
13. Paranoia
14. Despair, suicidal feelings, hopelessness
15. Arthritis, calcium spurs
16. Constipation
17. Racing heart, pounding heart
18. Adverse reaction to vitamins & minerals
19. Problems with concentration & memory
20. Short attention span, "spaciness"
21. Eating disorders: anorexia, bulimia, overeating
22. Panic attacks, high anxiety, free floating anxiety
23. Yeast infections (*candida*)
24. Aching muscles or muscle cramps
25. Hypoglycemia
26. Mind races -- insomnia, interrupted sleep
27. Cysts
28. Mononucleosis, viral infection
29. Low blood pressure
30. Obsessive thoughts
31. Hypothyroid (slow thyroid)

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Excess Copper Is Generational Problem

- Estrogen in birth control pills or HRT raises copper levels in cells & tissues
- Copper IUDs raise copper levels
- Excess copper often transmitted in utero to fetus – starts life with more copper
- Copper water pipes increase copper exposure
- Copper is stored in brain & liver – affects liver/GB, psychological functions
- More copper builds up during childhood & adolescence in female children
- Stress depletes zinc, copper increases
- Risk for physical & mental problems increases – important to detect copper toxicity
- With each generation, copper toxicity becomes more pervasive

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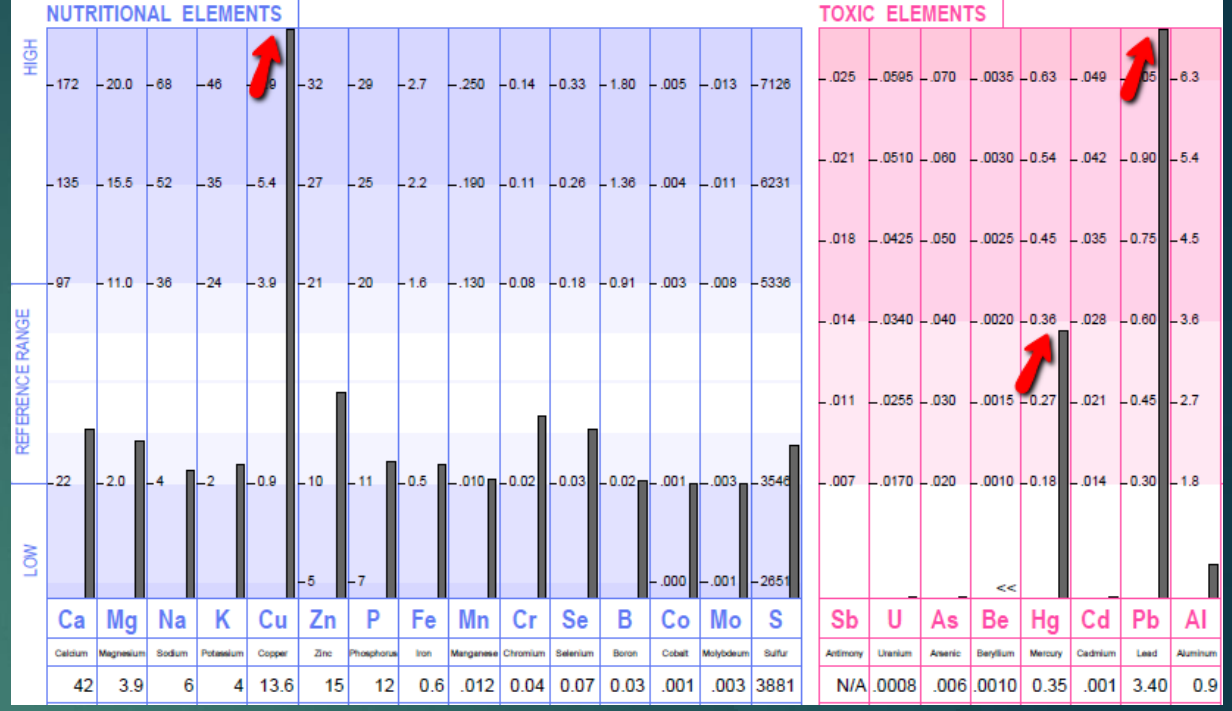
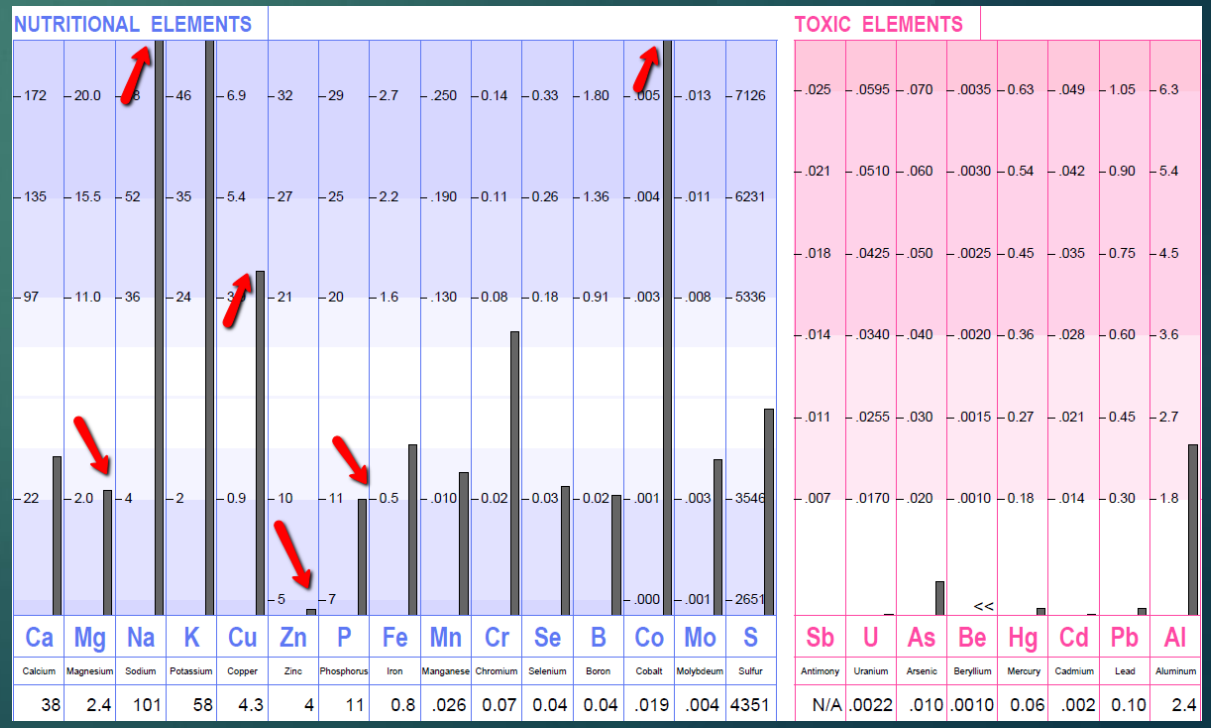
Exhausted Body With Racing Mind

- Mind races due to excess copper in brain
- Produces “driven” feeling behaviorally & emotionally
- Body is exhausted & fatigued – slows metabolism (thyroid & adrenals)

Trans-Generational

- 76 yr old with Parkinson's
- Had painting business
- Very elevated lead, copper & mercury
- Grand-daughter has achondroplasia
- Low Mg, P & very low zinc
- High Na – body under stress





Measurements Applied to HTMA

- Medical lab concepts applied to HTMA data:
  - Wide range of normal levels not IDEAL levels
  - Minerals analyzed in isolation
  - Patterns of interrelated biochemical components typically not used
  - Doesn't recognize dynamic metabolic system that changes over time reflecting person's health
  - Not relating nutrition, mind/body & energy

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Labs I Recommend

- Concept of nutrient mineral balancing related to healthy functioning:
  - Analytical Research Labs - ARL (www.arltma.com)
  - Trace Elements - TEI (www.traceelements.com)
- Don't overwash samples before analytical procedure
- Lab results can be reasonably compared for accuracy
- Na & K are 2 minerals most affected by wash procedures (2/3 lower)
- Important for assessing adrenal, thyroid, stress, detox
- High reliability – accuracy & reproducibility
- High validity – relate to meaningful presenting symptoms & patient history

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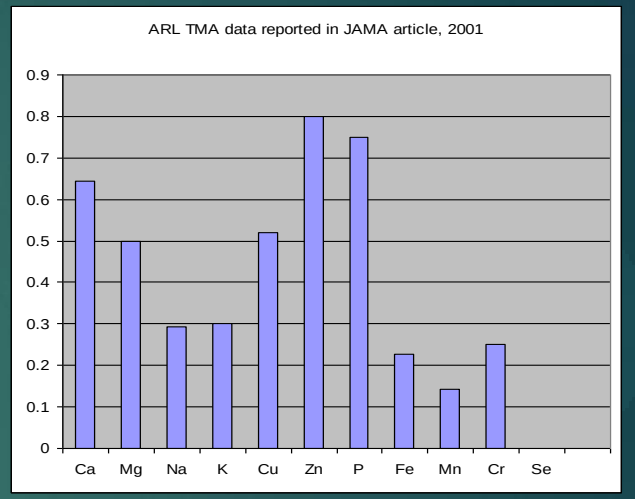
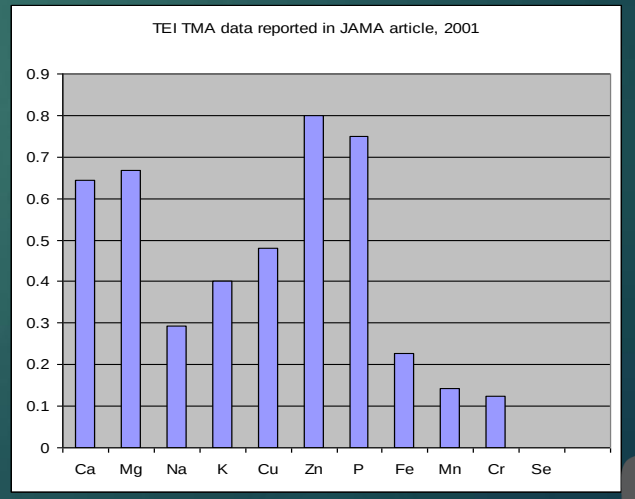
ARL vs TEI Comparison

	TEI	ARL
Ca	27	27
Mg	4	3
Na	7	7
K	4	3
Cu	1.2	1.3
Zn	16	16
Fe	0.5	0.5
P	12	12
Cr	0.01	0.02
Mn	0.01	0.01





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Free 15 Minute Strategy Session

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