

RICK FISCHER

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# MINERAL SECRETS TO OPTIMAL HEALTH



*From the creator of CopperToxic.com and Founder of  
the Mineral Mastery Nutrition Training Program*

**An Introduction to Mineral Based Health Concepts  
including Copper Toxicity, Detoxification,  
and the Importance of HTMA**

EBOOK EDITION AS A PREVIEW TO THE MINERAL MASTERY COURSE

"Trace elements (minerals) are more important than are the vitamins, in that they cannot be synthesized by living matter. [Minerals] are the spark-plugs in the chemistry of life."

~Dr Henry Schroeder, M.D.

This e-book is a greatly simplified version of course content from the MineralMastery.com nutrition course.

This e-book is offered to present basic concepts.

For a more complete understanding of the concepts mentioned here, the importance of taking the Mineral Mastery course cannot be overstated.

This is a vital health education for every practitioner, and indeed every human.

**DISCLAIMER: The information provided in this eBook is not "medical advice" and is not meant to treat, cure, or diagnose any condition. Always check with your doctor first before making changes to medications or supplements. The information herein is offered as general education only, to empower you to better manage your health.**

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ADVANCING NUTRITION EDUCATION

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# WELCOME!

Whether you're a practitioner supporting the health of clients, or just an everyday individual looking for answers or ways to protect & optimize your own health, this rarely taught mineral knowledge provides an essential foundation to nutrition education. Countless people needlessly struggle with their health, often simply because this information is not more widely taught.

With the launch of CopperToxic.com in 2014, Rick's work in the field of copper has served as a key educational resource for practitioners and health writers, and has brought into broader public awareness the understanding of copper toxicity . Through that work and years of research, in addition to Rick's work in clinical HTMA practice, as well as through the mineral-based health education he teaches through the Mineral Mastery program, Rick has dedicated his life's work to advancing the field of nutrition education, supporting people in finding health answers, and advocating for greater awareness of mineral-based health concepts along with the importance of hair analysis testing.

*My hope is that this e-book's introduction to minerals (and HTMA) lights the spark of curiosity within you to learn more...for yourself, your clients, and the loved ones you care for.*

RICK FISCHER

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# WHY THIS MATTERS

A young woman develops depression after going on a non-hormonal copper IUD, and is automatically prescribed an anti-depressant...

Though his medical tests looked normal, an HTMA test showed a man's severe magnesium deficiency, placing him at high risk for an imminent heart attack...

A loving relationship and family is shattered because of the emotional numbing effect of a high calcium shell - their relationship counselor completely unaware of this mineral connection...

A blood test showed all his minerals within the 'healthy' reference range, despite the patient's HTMA showing clear imbalances which helped explain his symptoms...

Similarly, a woman's thyroid panel comes back normal, while the HTMA test (a test dismissed by her doctor) revealed the very mineral pattern that explained her hypo-thyroid symptoms...

After her daughter's suicide, a heartbroken mother collects her daughter's hair from the morgue and discovers an extremely high copper level through HTMA testing, despite her daughter's physician reassuring her she had been healthy...

The stories are endless.

Case after case, patients are told their blood labs look normal, despite having symptoms. Each day, people adopt trendy diets, never conscious of the bio-individuality that makes one person's medicine another person's poison. Time and again, people are led to believe that eating 'healthy' is all one has to do to avoid mineral deficiencies and imbalances. Ultimately people's health, relationships, and lives are at stake because the information you're about to learn is overlooked in most mainstream health and nutrition messaging.

**It's time...to advance our understanding...**

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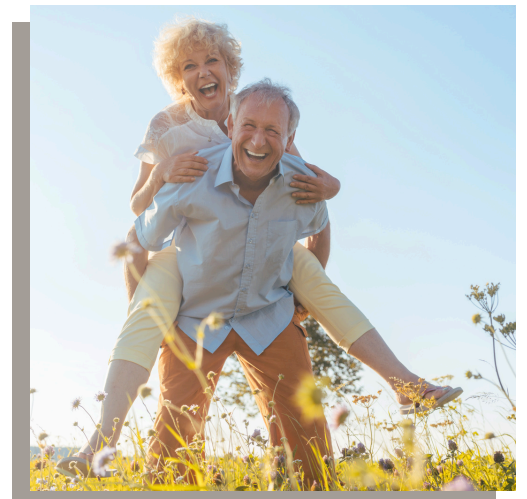
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Health empowerment. It begins with first shifting away from the existing mainstream 'disease management' approach, which typically:

- responds to symptoms after they appear
- places priority on pharmaceuticals and medicines rather than nutrition and holistic support, even in non-acute situations
- treats the symptom rather than the underlying cause
- gives 'disease labels' that are 'either or'. Either healthy, or not.
- places the responsibility of healing in the care giver's hands.

...and moving into what could be considered more of a true 'health care' approach:

- prioritizing prevention rather than reaction - supporting health before symptoms appear
- placing greater attention on nutrition training in medical school
- providing enhanced training on the health effects of micro-nutrient imbalances such as that taught through Mineral Mastery.
- understanding, and accepting, the mind <--> body connection
- viewing health along a continuum, versus the 'all or nothing' labels of 'disease or healthy'. (For example, many people don't feel optimal and are seeking answers, yet because they don't fall within the label of a specific disease, they're dismissed as "fine". The continuum recognizes these people where they are at, rather than dismissing them as "you're fine".)
- Supporting individual responsibility by empowering people with tools and knowledge they can use to protect & improve their own health.



As essential as the health care field is, it is not without its share of myths and fallacies, many of which are so ingrained in public perception that it would even seem odd to begin questioning. Such myths include:

- Blood tests are a reliable marker of the body's total mineral status
- Everyone should be supplementing more Vitamin D
- All sodium is bad
- Detoxing is not necessary because the body regulates itself fine
- Adrenal fatigue doesn't exist
- More calcium is important as we age to prevent osteoporosis
- Nutrition can't possibly contribute to mental illness
- Vegetable sources of Vitamin A are sufficient
- A non-hormonal copper IUD is a safe alternative to the Pill and won't affect mood
- Taking more iron is needed to fix anemia
- Taking a multi-vitamin will guard against vitamin deficiencies
- "Our magic supplement / protocol / diet..." is good for everyone
- Chelation is needed to detox heavy metals
- My doctor would tell me if I needed specific mineral support

Most people believe in at least a few of these myths. You might even feel a sense of frustration as read the above list if your background has convinced you that at least some of the above are true.

That is precisely the reason why the Mineral Mastery education course is so important. Most health and nutrition courses simply repeat the same old fallacies. Mineral Mastery is different, as it dares to shed light on areas of nutritional science that very few have been taught, yet which hold profound answers ...for those who are open to learning.

**"Mineral deficiencies are responsible for a host of health problems, which are incorrectly treated by drugs."**

Dr. Robert Thompson, MD

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# CALCIUM and MAGNESIUM

Magnesium is involved in hundreds of enzymatic reactions which affect pretty much all aspects of life. Every cell requires adequate magnesium to function, otherwise the cell dies, and life itself would not exist.

Magnesium plays a vital role in:

- heart health
- energy production
- detoxification
- stress reduction
- supporting nutrient balances
- bone health
- dental health
- mental health
- controlling inflammation
- blood sugar transport
- nerve function
- ...and many more essential functions

**"Magnesium is the most critical mineral required for electrical stability of every cell in the body. A magnesium deficiency may be responsible for more diseases than any other nutrient."**

~Dr. Norman Shealy

Yet, subclinical magnesium deficiency is so commonly overlooked, and represents a public health crisis when not properly addressed or tested for. The vast majority of people have some degree of cellular magnesium deficiency, rarely picked up in conventional blood testing.

When you recognize all the factors (literally dozens...as we get into in the course) that contribute to magnesium deficiency, that's the first step in empowering yourself to being able to protect and optimize your own level!



*As important as magnesium is, it's important to also know when NOT to supplement this mineral... as you'll learn!*

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# CALCIUM and MAGNESIUM

When it comes to calcium on the other hand, numerous factors have contributed to over-calcification across much of the population.

We're told to take more calcium as we age to protect our bones, while calcium carbonate is often promoted to pregnant women to take. Many foods are extra-fortified with calcium as if doing so is such a great thing...

For many, acting on such messaging further increases the risk for symptoms! Not only is the right type of calcium important, but even more important is addressing the widespread imbalance that already exists for most people between calcium and magnesium. A vast list of factors has contributed to an excessively high ratio of calcium to magnesium amongst much of the population. Therein lies the problem...without adequate magnesium, calcium becomes more detrimental than healthy.

Recognize any of these symptoms?

- unstable blood sugar
- sugar cravings
- muscle spasms / twitches
- depression
- emotional numbing
- osteoporosis
- blood clots
- kidney or gallstones
- frequent urination
- low Vitamin D
- joint stiffness...

**"Most people, including M.D.s, do not understand the importance of balancing calcium and magnesium at the cellular level. Calcium cannot build bones or prevent osteoporosis without adequate levels of magnesium."**

~Dr. Carolyn Dean, MD

If so... then there might just be a calcium / magnesium imbalance at work, and many of our daily habits are silently making that imbalance worse....until we recognize them!



# TESTING MINERAL STATUS

Blood is the most common and "accepted" method for testing. It is the basis for most patient testing as well as most nutritional and health studies. Yet, consider:

**The blood level is HOMEOSTATIC and does NOT REFLECT the stored tissue levels of metals, or minerals at the CELLULAR LEVEL.**

**Our biochemistry happens in the cell, NOT the blood transport system!**

This means that, with the exception of iron, most mineral deficiencies and metal toxicities that exist in the body are not typically seen in blood. This leads into the vast majority of patients and people being completely unaware of the imbalances silently occurring within their own body, especially when it comes to minerals and toxic metals.

There's also the option of urine testing, however:

**Urine testing only shows what the body is EXCRETING.**

Urine therefore isn't ideal for picking up cellular deficiencies, nor do tightly stored metals always show up in urine. Provoked urine testing using chelating agents will paint a better picture of excess levels, however forcing toxins out through the kidneys is not necessarily a gentle nor safe option.

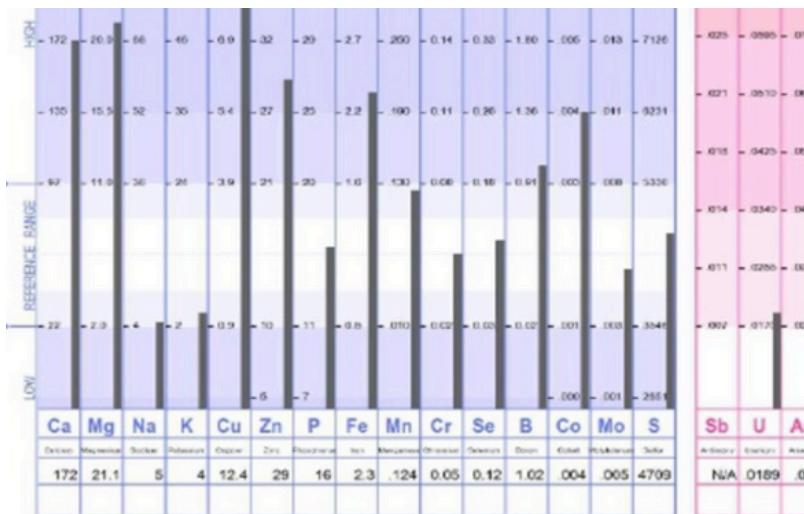
**"Medical science does not usually detect a potassium deficiency. Not until it's too late. 98% of all potassium is in the cells, not the blood."**  
~Dr. Robert Selig



# TESTING MINERAL STATUS

Testing the hair is another option. While blood can beneficially show the extracellular transport of nutrients, Hair Tissue Mineral Analysis (HTMA) better reflects the intracellular metabolic processes occurring. Other advantages of properly assayed HTMA include:

- HTMA is not subject to the hourly fluctuations that influence blood
- HTMA shows minerals in relation to each other. (This is a vital concept for understanding the ratios & patterns that correlate to health conditions).
- HTMA is the test of choice by the US EPA for toxic metal exposure
- HTMA can often provide early detection of health trends long before other methods
- the hair itself remains stable for biopsy for months, even years.



Here is an example of an HTMA chart. It shows hypofunction (or expression thereof) of both the adrenals and thyroid, together with copper toxicity. It provides clear insight into symptoms of fatigue, stress, depression, digestive issues, and more. Equally important, it provides a roadmap for safe detox and re-balancing... information impossible to obtain through blood. In fact, a serum test of minerals for this individual could very likely come back showing everything within the "normal reference range."

Learn the history of HTMA and the shocking efforts that have prevented this important screening tool from being more widely adopted!

There are many services on the market that use the term "hair analysis". **They are NOT all the same.** You'll learn exactly what to look for when ordering HTMA.

"I continually see the clinical value of hTMA results in accounting for many conditions that baffle most medical doctors and psychiatrists." ~Dr. Richard Malter, PhD

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# SODIUM and POTASSIUM

Sodium is another essential mineral, found mainly outside the cell; whereas its counterpart potassium is found mainly inside the cell.

Sodium, though it's been demonized, has many important roles including:

- helping nutrients cross the cell membrane (supporting cell nourishment)
- maintaining water and electrolyte balance
- helping nerve function
- supporting muscle function / contraction
- production of HCl (hydrochloric acid) production in the stomach
- ...and more

We've been conditioned to think that adding salt to our food is something to avoid. While too much salt in the wrong form (ie: table salt - stripped of other naturally occurring minerals) is indeed bad for our health and yes, table salt should be avoided - the right kind of salt however (naturally occurring and containing a wide spectrum of other minerals) can actually be very healthy for us!

See, it's not so much about how much salt we consume. More important is the ratio of how much salt (or sodium) we consume **relative to potassium**. Most people are quite deficient in potassium, and therein lies the problem.



*Sodium, when viewed through HTMA, can also provide an important stress marker and status of adrenal function...as you'll learn in Mineral Mastery!*

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# SODIUM and POTASSIUM

The daily RDI of potassium for the average adult is 4700mg. Unfortunately, many people have been led to believe that simply having a banana or two per day will provide them adequate potassium. To put things in perspective, a banana contains roughly 400mg of potassium, less than 1/10 of the daily requirement!

Further affecting potassium are factors such as:

- deficiencies of zinc and/or thiamine B1
- taking too much of the all-popular 'Vitamin D supplement', depleting cellular potassium
- stress or alcohol (can both deplete potassium)
- insulin resistance lowers potassium absorption
- fluoride, or mercury and other toxic metals, preventing potassium from getting into the cell where it needs to be.

Mainstream thinking suggests that the blood level reflects the body's potassium level. Since blood potassium usually comes back "within range", underlying cellular potassium deficiencies are almost always missed. Potassium belongs primarily within the cell. Looking at the cellular level, we discover that at least 80% of people are deficient in this essential electrolyte.

Remember, serum potassium does not reflect cellular levels. *(The irony of course is that mainstream medicine actually considers serum as the standard for clinical validity.)*

Considering this widespread deficiency, and potassium's role in blood pressure control, muscle building and contraction, electrical activity of the heart, HCl secretion and digestive tract activity, and so many more functions, we can begin to see why understanding the status of this mineral at the cellular level is fundamental to more fully addressing common health issues.

# COPPER and ZINC

First, let's talk about zinc and clear up a common myth - the myth that zinc deficiency is rare. Nonsense! The fact is, the majority of people are deficient in zinc to some degree. Again, we need to move away from narrowly looking at just blood, and consider cellular levels, along with the long list of reasons that contribute to zinc deficiency. The following list of zinc-depleting factors literally just begins to scratch the surface... we go much deeper into these reasons and many more within Mineral Mastery. For starters:

- Stress (depletes zinc)
- Glyphosate sprayed on many crops (chelates / depletes zinc)
- Mercury (displaces / depletes zinc)
- Pregnancy (depletes zinc)
- Alcohol and coffee (deplete zinc)
- Vegetarian / Vegan diet (high in phytates... impair zinc absorption)
- ...and the reasons go on.

Zinc plays many vital roles, from immune health, to melatonin production, hair, skin, and nail health, digestive function and gut integrity, even mental health. It is also essential

for keeping copper in check. Zinc is an antagonist to copper, but not so much in the 'detox' sense as is commonly promoted. Zinc supports metallothionein (MT) synthesis, which in turn prevents copper accumulation. When zinc is low, MT synthesis is impaired, and copper can accumulate...

**"The national nutritional NHANES III survey determined that 45% of Americans do not obtain sufficient zinc, EVEN if they consume zinc rich foods."**

~<https://blog.undoctored.com/whats-story-zinc/>  
~[https://academic.oup.com/jn/article/130/5/1367S/4686375,](https://academic.oup.com/jn/article/130/5/1367S/4686375)



*Are you ready to learn all the ways that zinc supports health, including how it's been successfully used in treating certain mental health conditions? If so, there's a discount code for Mineral Mastery included for you at the back of this book!*

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# COPPER and ZINC



Copper is likely the most misunderstood imbalance in health and nutrition.

Messages such as "*copper toxicity is a myth*", "*HTMA is not useful...serum is a better test for copper*", "*if you're deficient in copper just take more copper*"...these messages all just add to the confusion, leave "copper toxicity" off the public radar, and have kept so many people in the dark from finding answers that in some cases could have even saved lives. Confusion is amplified when people without adequate training read a blood test (or HTMA for that matter too) at face value.

**"Copper is the most important metal that we really need to be dealing with because its connected to so many common issues that we're all suffering from."**

~Ann Louise Gittleman, MS, CNS,

The best way to understand copper status and the effects of copper on both physical and mental health, is to examine the cascade of changes in the body's mineral system that excess copper induces...something most easily seen when viewed through HTMA. One will never properly understand copper as long as one looks at copper in isolation. Likewise, one can never fully understand copper 'deficiency' until the concept of copper 'toxicity' is recognized. In most cases, toxicity leads to deficiency, and therein lies the confusion. It is akin to being in an ocean of water yet dying of thirst - water all around but none of it drinkable.



*The denial and suppression of copper toxicity has had a devastating toll on countless lives and relationships. Mineral Mastery is the original course to shine the spotlight on copper toxicity, helping to support both professional training as well as personal health empowerment.*

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# COPPER and ZINC

Due to the complex nature of copper, a special study is needed to understand copper toxicity. The implications of this imbalance have far reaching implications across all areas of health, including mental health. This a big focus that Mineral Mastery provides education on. For here, let me offer you a "simplified" snapshot.

Numerous factors including excess estrogens, copper IUDs, copper piping in homes (drinking water), copper sulfate on crops, in-utero transmission, deficiencies of certain nutrients (especially zinc), biliary impairment, and other factors can lead to an over-accumulation of copper in the body.



Copper first accumulates in the liver, and then secondary locations such as the brain where it acts as an excitotoxin. Initially stimulating, over time its accumulation can lead into ever increasing states of brain fog, anxiety, adrenal fatigue and/or burnout. With adrenal burnout or liver congestion, the level of a protein called ceruloplasmin (Cp) tends to decrease (although that marker by itself can be misleading for a number of important reasons as explained deeper within the course). Nonetheless, Cp is a protein that binds to copper to make copper "bio-available", and so if Cp is low, then there is a deficiency of "available" copper. Furthermore, retinol and magnesium are needed to bind copper to Cp, and so deficiencies of retinol or magnesium can also contribute to a deficiency of available copper. This bio-unavailable copper accumulates in cells, tissue, organs - primarily the liver, and secondarily the brain and other locations. In this way, there can be lots of copper in the body (excess) yet it is not in a usable form (thus also a deficiency).

# COPPER and ZINC

This imbalance of copper can then go on to affect digestive function, increase the risk for candida, impair energy production, impair concentration (brain fog), affect thyroid status (and associated symptoms of hypo-thyroid), as well as affect emotions and one's mental health.

Available copper is also needed to support iron. (Hint: a lot of anemia is not necessarily a call for more iron, but rather a suggestion to examine one's copper and ceruloplasmin)!

Copper also has powerful roles on neurotransmitters (dopamine, serotonin, GABA...) and in this way copper toxicity is a key player in various mental health conditions. Copper toxicity can most definitely increase the risk for depression and anxiety, while at more extreme levels paranoia and schizophrenia can even result.

In this way, Mineral Mastery has built a vital bridge further connecting nutrition with psychology. We dive deep into this copper connection, as well as key considerations for safely "detoxing copper" (and other metals too).

**"Many of the most prevalent metabolic dysfunctions of our time are related in some way to a copper imbalance."**

~Dr. Paul Eck



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# QUICK SNAPSHOTS OF IRON & IODINE

While the common message for those with anemia is to simply take (supplement) iron, such messaging is not only potentially harmful, but also ignores the underlying cause of the anemia in many cases.



First of all, excess iron is oxidizing to the body...this not a good thing! Over time, it can actually lead to joint pain, arthritis, liver disease, and more. Yet, when practitioners tell their clients to take more iron simply

because their level is 'low', or they're anemic, or their ferritin is low...are they considering that...:

- ...roughly 95% of iron consumed is stored in the body to begin with?
- ...high ferritin (in the range commonly pushed for) can be an inflammatory marker?
- ...other nutrient deficiencies (such as retinol or B12) may also contribute to anemia?
- ...low HCl (very common) can impair iron?
- ...or that copper toxicity / deficiency could be the culprit?

**"When there are inadequate levels of copper available, sufficient levels of iron may not be incorporated into the hemoglobin molecule, thereby instead resulting in soft tissue storage of this essential nutrient. If chronic, this pattern is indicative of a tendency towards anemia. A copper deficiency-induced anemia does not respond to iron supplementation or increased iron intake."**

~Dr David Watts  
Trace Elements Inc

*Hint: The Mineral Mastery course teaches how copper imbalance plays a major underlying role in one's iron status. A lot iron anemia cases are caused by a deficiency of AVAILABLE copper... and it's not just copper... there are other vitamins and minerals along with ceruloplasmin that must also be addressed in order to support iron.*

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# QUICK SNAPSHOTS OF IRON & IODINE

As for iodine, this mineral too is greatly misunderstood. Iodine plays a vital role in thyroid health (and hormone production), detoxification, brain development, even protection against fungal infections and even cancer.

Yet, many people are led to believe that the RDA of iodine is 'good enough' and that their iodized table salt gives them sufficient iodine. Not so!!

Other messages meanwhile have led to fear around iodine supplementation, and so some people avoid it altogether. There is certainly caution needed when taking iodine BY ITSELF at higher doses, however the risks are greatly reduced when you take a particular anti-oxidant nutrient together with iodine. We explain this further within Mineral Mastery. For simplicity here, too much iodine by itself can increase oxidative damage (even inducing autoimmunity), yet adding one single nutrient can reverse that effect. This also applies to Hashimoto's. While people are warned to avoid iodine with Hashimoto's, iodine can still be quite important (and safe), so long as it's taken intelligently. Given the numerous jobs that iodine does for the body, when consumed or supplemented properly, iodine becomes one of our most important allies in health!

A properly interpreted HTMA together with an assessment of symptoms can provide clues as to the need for iodine supplementation. An iodine spot test is a simple "non-scientific" test one can do at home to get a general sense of iodine need - apply a 2" square of tincture iodine on your wrist (be careful, it stains), and let it dry. Ideally, the patch should still be visible in 24 hours. If it vanishes sooner, especially 16-18 hours or less, you may indeed have a real iodine deficiency. An Iodine Loading Test, as well as an Iodine Dried Urine test are additional and more accurate methods for measuring iodine status.

*We address all these minerals and many others in much more detail within Mineral Mastery. We also get into vitamins...*



**"Iodine deficiency is the world's most prevalent, yet easily preventable, cause of brain damage."**  
~World Health Organization

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# A PREVIEW TO SOME OF THE VITAMINS

MYTH:

*"Taking a multi-vitamin is great insurance against nutritional deficiencies in my body."*

Not only are "multi's" produced to sell to the masses (thereby not specifically addressing YOUR unique imbalances or needs), but about 95% of vitamin supplements are synthetic and in some cases can even make certain deficiencies worse! You'll learn why in the course.

## VITAMIN A. Did You Know...?

- it's important for vision, skin, bone health, sleep, and reducing inflammation!
- it's important for supporting the bio-availability of both copper and iron!
- relying solely on beta-carotene sources can be problematic "genetically" for roughly half the population!



*If you're astutely beginning to connect the dots already, this is a hint as to why some people can thrive as vegans while others become quite ill.*

## VITAMIN C. Did You Know...?

- it's important for immune health, tissue repair, making collagen...
- most supplements (ascorbic acid) are synthetic
- knowing your mineral profile helps determine if and when taking ascorbic acid may be more beneficial (or vice versa) than the 'whole food raw C' form.

## VITAMIN D. Did You Know...?

- taking it as a pill is NOT the same health-wise as obtaining beneficial Vitamin D from the sun!
- the vast majority of people are taking Vitamin D incorrectly, unwittingly potentially contributing to other health conditions developing down the road to which they'll rarely connect the dots.
- magnesium plays a vital role in your Vitamin D status.



*These are just some of the many "AHA" moments that await you in Mineral Mastery!*

**"Magnesium deficiency shuts down the Vitamin D metabolism pathway."**

~Dr. Qi Dai

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# TOXIC METALS

Toxic metals such as mercury, arsenic, cadmium, uranium, lead, aluminum... we're all exposed to these elements through our air, food and water, not to mention some of the more obvious sources of these metals such as amalgams, vaccines, cigarettes, etc.



To think that we are immune to these exposures, or that these metals do not accumulate in our bodies (and therefore that detoxing is not important), is just wishful thinking. Remember, these toxic metals do not get stored in our blood, so testing for these elements via blood is unlikely to show much. These metals get tightly stored in our tissues, which is why doing a liver biopsy, urine challenge testing, or HTMA is needed to more fully understand the accumulation of these metals and how they affect us.

What does this have to do with minerals? Well, these metals have a direct relationship with minerals. When certain minerals are lacking, the corresponding toxic metal is more likely to take the place of the mineral in that mineral's receptor sites. In other words, optimizing your minerals can help reduce how much toxic load your body holds on to.

Likewise, knowing which metals are high in your body, specific nutrient support can then be used to mobilize and detox those metals. Zinc and selenium, for example, play a very important role in the detox of arsenic, mercury, and cadmium, while magnesium helps support the detox of aluminum.

In Mineral Mastery we go through the various sources of exposure to these metals, common symptoms that can develop, the relationships between the metals and minerals, and how to use specific nutrient therapy to support the body's detoxification process.

**"Dental amalgams will continuously leach elemental mercury vapor during chewing, brushing and corrosion into saliva, which is inhaled and has been proven to accumulate in the body."**

~ZRT Laboratory

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# DETOXING: COPPER

Despite all the literature over the decades from experts in the field of copper toxicity research (Pfeiffer, Eck, Walsh, Gittleman, Malter, et al), there still remains much public and professional lack of awareness when it comes “detoxing” copper. Quick searches on related forums will typically turn up the common myths of "take zinc to detox copper", or "just take zeolite", or of course, the idea that "if I simply detox this copper, all my symptoms will go away".

These misconceptions ignore:

- Zinc helps prevent copper accumulation by way of supporting metallothionein synthesis, but zinc itself is not a strong chelator of copper.
- Copper does not act alone, and focusing just on detoxing copper ignores the symptoms caused by other minerals that have become imbalanced from the excess copper. Those imbalances must also be addressed.
- MOBILIZATION OF COPPER DOES NOT EQUAL DETOX. Detox pathways must be open, and bile must be flowing, to allow for the excretion of copper.
- Nutritional detox support can best be based on the HTMA-based mineral pattern, and should be adjusted depending on whether copper is actively being mobilized or not. Genetic variations further influence nutritional needs. This all underscores why there is no “one-size-fits-all” protocol or approach.
- As copper is also an essential mineral, part of 'detoxing' must simultaneously also recognize steps that help improve the overall bio-availability of copper.

Created by the founder of CopperToxic.com, Mineral Mastery really shines a strong spotlight on copper toxicity, its effects (and why some people are affected more than others)... and of course, detox approaches. These approaches can include both nutritional as well as synthetic options such as D-Penicillamine, Trientine, etc. Education is also provided on the psychological aspects of detoxing copper too quickly, since copper is one of those minerals that can send a person over the edge when detox is not approached intelligently.

*Understanding the Why and How of detoxing excess copper can become one of the most empowering health tools for any woman, as well as any health practitioner.*



**"Many symptoms can occur when excess copper is eliminated from the tissues... free floating anxiety feelings, spaciness, fears and disorientation may occur."**

~Analytical Research Labs Inc

*Advancing Nutrition Education. Empowering Individual Health.*

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**MINERAL MASTERY**  
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# DETOXING: TOXIC METALS

While the mainstream approach to detoxing metals often involves synthetic chelating agents such as DMPS, DMSA and others, these agents are not without potential side effects. While they can certainly be beneficial in cases of acute toxicity where an emergency approach is needed, some of their downsides include:

- the potential to deplete beneficial minerals
- putting a strain on the kidneys as these toxic metals are excreted
- the risk of potential redistribution of metals from 'safer' soft tissue sites to other locations such as the brain.

A safer approach is 'nutritional chelation', which uses preferred nutrient minerals to allow the body to more naturally release toxic metals in its own time and wisdom. Understanding the relationship between minerals and metals allows for a targeted nutritional approach to safely release specific toxic metals.



By understanding this specificity and targeted approach, one comes to realize that a true detox is not found in a 7-day kit at the store. Sure, they can offer convenience in general liver and detox support, but there is so much more involved to detoxing the body than most people realize.

Binders can (and should) also be employed. These can include zeolite, cilantro, modified citrus pectin, activated charcoal, bentonite clay, diatomaceous earth, silica, and others. These binders though are not one size fits all. They each have their own specific affinities, benefits, and drawback, and the employment of a specific binder depends on what the goal of the detox is (ie: specific toxic metals, vs molds, mycotoxins, etc).

**"The truth is chelation can be devastating to those with autoimmunity, neurodegeneration, or an immune reactivity to chemicals."**

~Dr Datis Kharrazian

# THE WHEEL OF HUMAN ENERGY

Fatigue is such a common symptom these days. So many people struggle with exhaustion, just trying to get through the day. To help further evolve the understanding and research in the field of human energy, Rick developed the energy model "*The Wheel of Human Energy*". This model brings together the long list of mineral and physiological aspects, along with external factors and various other influences, that all affect energy. This Energy Model is the basis for the final unit of Mineral Mastery, as we focus in specifically on the often ignored mineral implications to energy.

People often think of energy production in terms of ATP energy, or the health of our adrenals (adrenal "fatigue"), or mitochondrial function. These factors absolutely play fundamental roles in energy, and yet it is our minerals that regulate and affect all three of these components. For example, while the mitochondria are widely understood as the energy production centers of our cell, less understood are the roles that calcification alongside magnesium deficiency have on the mitochondria. Understanding how to optimize your calcium/magnesium balance (and the factors that can throw off your Ca/Mg), can therefore go a long way in supporting your energy as well.

Our mitochondria of course produce ATP energy, but in this process, nutrients including copper, iron, and B12 are also needed. Thus, if we're struggling with copper toxicity (and the corresponding deficiency of bio-available copper that comes with it, plus the resulting dysregulation of iron), that's going to affect ATP. B12 plays a role too, but few stop to consider the importance of gut health and HCl production for supporting B12 levels, or the very nutrients needed to support HCl in the first place **Everything is interconnected and minerals are at the foundation to it all.**

**"Mitochondria and how the body generates energy are involved in almost every pathological process you are to mention... [Mitochondria] are a vital unit of energy generation."**  
~Dr Sara Myhill



# THE WHEEL OF HUMAN ENERGY

Similarly, our minerals regulate our adrenals and thyroid - these glands being responsible for the vast majority of our energy production. We examine these important connections, and the connections back to our minerals. We also look at gut health, and how certain imbalances can open the door to parasites, for example. Those parasites in turn can be silently robbing energy... and then here is where iodine (when introduced safely) can help in the battle against parasites...and in turn supporting energy. Likewise, if candida is an issue, then mineral imbalances (specifically copper, zinc, & molybdenum) should be looked at.

Circadian rhythm and poor sleep of course also affect energy, and once again our body's mineral system should not be ignored. Many practitioners promote the direct use of melatonin to assist sleep, but in Mineral Mastery we teach how mineral deficiencies and excesses can be impairing not only melatonin, but also the liver...further impairing sleep...and affecting energy.

After our previous unit on toxic metals, in this unit we now explore further how those metals can create channelopathies which effectively block essential nutrients from getting into the cell...once again silently affecting our mitochondria and impairing energy.

This 'Energy' unit helps bring many of the course concepts together, and provides a comprehensive look (along with actionable steps) for anyone looking to optimize their energy levels. Very few, even amongst professionals, consider the connections this unit (and indeed this entire course) make.

Whether for finding answers to energy issues, mental health concerns, digestive complaints, cardiovascular, musculoskeletal or other concerns, the Mineral Mastery course provides a refreshing, ground-breaking, and vitally important education that empowers both the wellness professional as well as the everyday individual.



**ARE YOU READY...  
TO CONNECT EVEN MORE DOTS  
AND TRULY OPTIMIZE YOUR HEALTH?**  
JOIN OUR TRIBE OF MINERAL MASTERY GRADUATES!

## **OUR STUDENTS SAY**

"THE COURSE WAS  
EXCEPTIONAL"

"VERY  
INFORMATIVE!"

"THE MISSING LINK.  
INCREDIBLE!"

"EXTREMELY  
EYE-OPENING"

"HIGHLY  
RECOMMENDED!"

"EVERYONE SHOULD  
HAVE THIS  
INFORMATION!"



*The "nutritional user-manual" everyone deserves to have,  
but was never given.  
Indeed a vital education for every human to receive.*

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