CPC #9: HASHIMOTO's AND MELASMA: GATEWAY DISEASES

READERS SUMMARY:

How does a good question on the forum lead to a better answer to modern disease?

There is no trophy in health without a race……for a new truth.

With many of you gathering with family this holiday weekend here is my little gift for you. These two diseases just puzzle and confound many. In this blog, you will see a new way to look at these diseases.

Melasma is one of the most common problems millions of women face and they spend millions of dollars on cosmetics and dermatology consults to try to get rid of the problem. Melasma is particularly common in women, especially pregnant women and those who are taking oral or patch contraceptives or hormone replacement therapy (HRT) medications. It is also common in women who go through an early and fast paced menopause. They also tend to have poor sleep as a stereotype for a deep reason.

If you ask any dermatologist, if they are honest they will tell you it is one of the toughest 3 things they try to treat. The main reason it is a tough disease is that we are not thinking about the pathway that forms pigmentation in humans

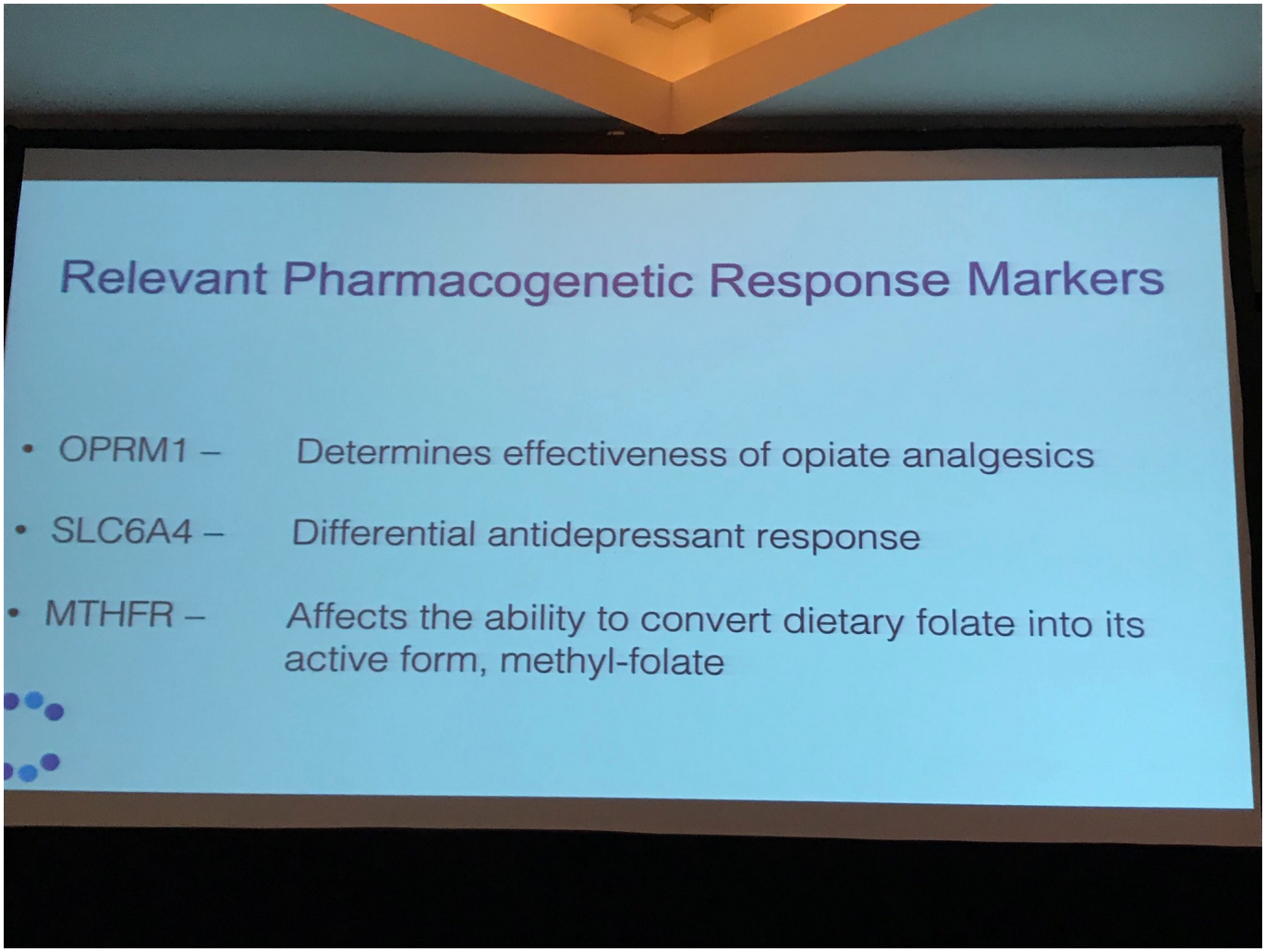
correctly using normal environmental signals. This pathway is tied to many of the blogs I have already written. The pathways all tie back to the 3 legged stool of life I wrote about in Energy and Epigenetics 4. These 3 are the photoelectric effect, water chemistry, and the electromagnetic force.

Most women who have melasma have a history of taking oral birth control pills or exogenous sources of estrogen. Estrogen is normally destroyed by UV sunlight. If you never get any your estrogen levels remain too high. Oral contraceptives also deplete nutrients more than any other class of drugs because they alter the microbiome. The hormones in these drugs are very strong synthetic chemicals. Nature never intended for women to put these synthetic hormones in their mouths or to have them introduced in their gastrointestinal tracts. Once there, they cause alteration of the gut microbiome and this leads to mucosal irritation and alterations of the local cellular environment that heavily interferes with the absorption of nutrients from foods. Synthetic estrogens simplify the gut flora. The changes in quorum sensing lead to the depletion of B vitamins, magnesium, selenium, zinc, and CoQ10 and most importantly DHEA. These are all key parts of the Mitochondrial Rx. When I started to look at the incredible range of nutrients that are depleted by BCP's many women take on a regular basis, I started to realize that there are a lot of potential health problems that are exacerbated by these issues. These changes destroy the natural organization we see in a cell. Melasma is one such gateway disease. These issues manifest themselves in many ways. A direct lack of absorption of folate or certain B vitamins can result in a deficiency that causes a loss of appetite, weight loss, weakness, headaches, and in severe cases, heart palpitations. They are also linked to thyroid disorders. Advanced deficiency could even lead to autoimmunity, anemia, and cancers. They all directly affect the redox potential of the gut lining and set the stage for

what you learned about in CPC #8 and the Redox Rx.

HASHIMOTO'S LINK

Some of the nutrient depletions that I worry most about are vitamin B6, BH4, tyrosine, and iodine. BH4 is part of the methylation pathways for neurotransmitters, like dopamine. COMT pathways are quite important for those with sleep disorders and low DHEA. BH4 is needed to synthesize serotonin, dopamine, conversion of phenylalanine to tyrosine and language-related function (autism connection). The A1298C mutation in the MTHFR gene may also impact levels of BH4.



Remember BH4 is a B like a vitamin so exogenous estrogens deplete BH4 too!!! Vitamin B6 is required for the production of serotonin and melatonin from tryptophan and UV light. Serotonin gets converted to melatonin in the pineal gland during darkness, which is why a B6 deficiency may lead to

sleep problems. Simultaneously IL –6 rises in the brain to destroy melatonin and DHEA signaling. Here the B vitamins of the MTHFR pathways overlap with COMT pathways. Sleep problems in these women are often diagnosed and treated with Rx drugs, when a B6 supplement may be effective. Tyrosine is an aromatic amino acid precursor for the production of dopamine and norepinephrine, which are involved in a vast array of brain functions, including motivation, stress, cognition, and arousal. Both are time crystals in our tissues. These are all symptoms of women with melasma and Hashimoto's because of the blue light hazard on their skin.

Melanocytes Sense Blue Light and Regulate Pigmentation through Opsin-3.

Hashi's is a tough illness to solve, as is melasma when you're looking in the wrong places like dermatologists are. I believe if you give it 18 – 36 months of changing technology behaviors, I think it is beatable and reversible. The problem is few people check their MTHFR, COMT, or B vitamin pathways or their adrenal stress index to look for low melatonin levels to get clues why they often occur together. These are all incredibly important in moving electrons and protons around proteins in the MTHFR, COMT, and B vitamin pathways. **This effects the 3 dimension molecular structures of the proteins in these pathways, that directly affect their quantum superpositions in tryptophan.**

Quantum superposition is a synonym for the atomic-molecular arrangements in these proteins. The problem is people hate trying to understand the details that QED requires of us, to understand the complexity of life and wellness.

Studies of birth control pills (BCP's) users have revealed

that the women taking the contraceptives were almost two times as likely to develop depression and sleep disturbances as non-users in Australia. Most women with chronic low redox potential and Hashi's will tell you when they awaken, it almost feels like life is over. Instead of thinking this way, begin to understand how physics dictates your proteins and your biologic responses.

Think this: It's not always about trying to fix something that is broken…..sometimes, it is about starting over and creating something better. That is why failure is so good for those who are ill. Few of them realize the lessons it is bringing to them because their brain is not working well……..failure moves off your current beliefs to see a new path you might have missed. This is where the road to healing lies, in most people's blind spot.

Just because you understand the picture I am painting, does not mean you will gain a reversal either. Why? Even if you're on the right road to health with new wisdom, you'll get run over if you just sit there. You must realize these gateway diseases are tied to what "you allow" to occur in your environment.

Iodine is critical for oxidation protection of PUFA's utilized by the brain and thyroid, such as DHA. It also appears that iodine is a lot better protector of all lipids in all cells and not just the brain. With iodine deficiency, the body loses the ability to handle ROS optimally, and other organ systems have to offset those losses to protect the cell from more oxidation. Supplementation is not the answer.

Regarding supplements: If you make it normally in your body…….you're not designed to take it. If you do you are likely to cause collateral damage to your cell because the redox potential is off. When this happens you could make the situation worse. Replacement of foods that carry the evolutionary package to your cell is the best Rx. This helps

the cell reorganize based on the quantum blueprint already within you.

When this happens the cell is placed in a chronic survival mode, with its functionality severely compromised. A critical problem here is that Iodine is a constituent of the most powerful inhibitors of lipid peroxidation in humans, in concert with the thyroid hormones. These anti-oxidants are so powerful that they exceed the efficacy of vitamin E, glutathione, and vitamin C in humans. When Hashi's patients have lowered iodine concentrations it really depletes them of glutathione making thyroid antibody (AB) production much more likely. This is why TPO Antibodies's are a great Redox Rx indicator. When iodine levels are low, women have a proton disorder, and this causes estrogen levels to soar chronically. Beta oxidation in the TCA drops and demyelination of the CNS is usually not far behind. Devic's syndrome is a classic example seen in Asian women. These diseases are all cousins of Hashimoto's and melasma. Devic syndrome is closely related to the disease that astronauts get while they are in space. <<<<READ THIS. Today Hashimoto's and melasma represent two diseases becoming far more common on Earth because the mechanism giving it to you is also alien to our biology. The environment you live in today is stealing electrons from these tissues chronically.

In fact, it appears the real reason vitamin C may have lost its role in humans, as a powerful antioxidant protector in cells, is because it is not strong enough to protect AA and DHA in human brain tissue nor the thyroid, particularly at the synapse of neurons. I mentioned this in the brain-gut series many times before. It seems that breadcrumb went undiscovered.

CASE EXAMPLE

I'll give you an example of someone with a spine problem I saw a few years ago……. a total spine fusion skeptic who also had

melasma and Hashimoto's with horrendous case degenerative disc disease. I told the person if they gave me 12 months of transformational behavior, I might be able to help them from having a cervical fusion on their neck. That got her smiling and thinking differently. After going over all her history, I realized casein in dairy products were setting her immune system off; it was specifically the tyrosine in the casein that what was setting off her immune system. I suspected she had a COMT defect causing her sleep/ psychiatric defect. When you have a homozygous COMT defect like +/+ Met/Met you have to consider this carefully. When this defect is present and it is epigenetically expressed you must avoid tyrosine-laden foods. I actually talked about this case at Paleo Fx in 2011. None of them got it, none of the food gurus still do.

Her history revealed a constant accrual of food intolerances as time elapsed to new substances. Most of her "alternative paleo practitioner's" from the west coast kept giving her an Rx for an elimination diet. This is much like many paleo practitioners tell people with Hashi's to do with iodine and seafood. I know this because many of them send me emails about what they were told in Skype consults from prominent paleo practitioners. When you understand how the immune system is activated by the AI induction hypothesis (LING) and how it ties directly to water, K+, iodine, and seafood, you should consider telling them something different. Ling had a lot wrong, but got the big things right.

When you suffer from+/+ Met/Met COMT defect this means your proteins will handle charged particles in your proteins differently than other people without the defect. This defect in COMT tells the clinician that the pathways that catabolize dopamine and norepinephrine are not fully functional, and as a result, the patient exhibits higher levels of both neurotransmitters resulting in increased anxiety, mental slowness, and in extreme cases, psychosis. The flip side of this COMT defect is the -/- Val/Val. When you have this

defect your COMT pathway works ***too well***, and it catabolizes dopamine and norepinephrine rapidly, resulting in very low levels in synapses. People with this COMT defect will greatly benefit from eating foods high in tyrosine but low in carbohydrates. Avocados are the ideal food here. When either one of these defects is associated with dehydration the defects tend to manifest more severely. This is why high non-native EMF environments are devastating in patients with MTHFR issues with either one of these defects. It makes knowing this information important for the patient and the clinician. Few people who treat these condition or who have melasma or Hashimoto's know this information. Even fewer people with **degenerative disc disease** know this information.

ELECTRON STEAL SYNDROME

When you are missing electrons or missing the potential energy bound to your protons in water hydration shells that surround these proteins what do you think happens chronically to these ladies? The answer: their immune system seeks out new food substances to make antibodies to, then attacks the self-similar proteins in the affected tissues via molecular mimicry mechanisms related to a broken circadian mechanism. It all links back to blue light. The end result is the common denominator of **protein transformation** but the epigenetic trigger event is what is different. All proteins are translated by a single start codon tied to a broken circadian mechanism. This makes their diseases presentations very random. This is why clinicians are easily perplexed in these patients.

The small-minded idea is to just avoid the foods; a better clinical suggestion is to check the MTHFR pathways and melatonin levels. Few recommend this course of action. Can you overcome the MTFHR defects if you build a strong redox potential and limit non native EMF? Yes, you can but few every get told this because few people know this. I mentioned it in the podcast I did with Tim Jackson last year. The right

clinical play is to restore the redox potential in your matrix by improving things that improve the control of electrons and protons to be delivered to the proteins in our cells. I talk about this in Brain Gut 1 and in this thread on my forum.

Tyrosine is the body's signaling molecule for tissue and protein creation via the ubiquination pathways. When proteins are replaced too fast or too slow, you will also see major sleep problems in these patients. Tryptophan is more sensitive. When both are out of whack sleep fails. Sleep is when autophagy occurs in us. This is why the COMT defects are critical to know about in these people. Proteins are turned over in our body by these pathways, via ubiquitin. If the protein is not optimally energized by electrons or protons it gets marked for replacement in this system. This occurs during a process called micro-autophagy. You learned a little about them in CPC#8 and some of the recent webinar's (February- June 2014).

The amino acid tyrosine is a precursor for thyroid hormones, DHEA, and dopamine synthesis. They are all excited by AM sunlight in the eye. An enzyme activated during chronic bacterial infection (think altered quorum sensing in the gut due to synthetic estrogens) can deplete tyrosine levels, which is why there is an association between low thyroid function, DHEA, and chronic sinus infections. It also lowers iodine and lithium levels. This is why Hashimoto's can be a gateway disease to many other diseases like PCOS, Multiple Sclerosis, Devic's syndrome, or anxiety/depression too. Hashimoto's is made worse by blue light exposure on the skin and a LACK of AM sunlight.

These protein ubiquination pathways use way more energy from your cells than any other pathway. I have already told you when you when you eat carbohydrates consistently out of season, you diminish your methylation ability. This is how it happens. We covered this in detail in EMF 4. So when you mark proteins for replacement with AB's created by an altered

immune system, what is the real problem? **Is it the AB's production or the protein turnover?**

The ANSWER: It is the protein turnover because it costs you huge amounts of electrons and protons. These energenic particles are stolen from the immune system and the brain first. Why? The MHC1 gene was the linkage we spoke about in the Energy and Epigenetics 7 series early on. These were the last two evolved systems, so when energy is depleted for any reason at all, the result is felt first in these two systems. We **steal our electrons** from Peter to pay Paul. This tells us the Auger effect is broken in us at the skin level. We go to our most complex systems, where electrons are always abundant and "borrow" some to cover the deficit. After a while, the electron borrowing becomes a new disease.

So if you got a case of Hashi's with tyrosine issues……..you must realize casein contains large quantities of tyrosine on a %, so this is why consuming dairy products was probably increasing their immune organs' propensity for creating antibodies. AB's are a function of this connection from the gut absorption. Casein's tyrosine levels are tied to the amount of dairy that is A1 vs A2 types. You can read "Devil's in the Milk" by Keith Woodford on the subject of A1 vs. A2 milk and the casein tyrosine loads. These casein proteins also cross react with BCM7 and and act as an apomorphine in the CNS to destroy signaling further. This is why so many obese Hashi's ladies have trouble losing weight. Obesity is also an electron depletion syndrome tied to blue light exposure in the skin and eye. Think EMF 2. When you have pain, chronic use of opiates also make you gain weight for the same reason. Chronic pain is an electron depletion state too linked to AM sunlight via POMC in the eye!! **Hyperlink.** You want to try to find A2 milk but it is hard to find world wide. Hashi's folks need to be mindful of casein loads once the disease is entrenched. The nutrients that help metabolize them are all awry by the time diagnosis is made. The redox

potential in all disease is tied to water chemistry. This is where ladies with melasma and Hashi's need to put their focus.

This disease is very interesting to me, because Hashi's patients ***always have unique features*** to their condition; but all of them are buried in how TH1 and TH2 proteins are activated and/or deactivated by electrons and protons from their local environment in the gut and thyroid and HPA axis that the women are forced to live in in our modern world. Think about how SHBG was activated/deactivated in the CPC# 8 blog. I talked about this in the recent webinar's and Q & A's in detail. It is the same molecular gymnastics at play. Hashi's, in my mind, is the **ultimate non native EMF challenge** for the clinician and patient and that is why few solve it. Enough about Hashi's……let's talk about melasma.

TO BE OR NOT TO BE: **The B vitamin link:**

Niacin is a B vitamin; vitamin B3 has been shown to be quite helpful in melasma. The positive effects of niacin in clinical trials on melasma pull back the veil on something biochemists and physicians might have missed this condition. Niacin use simulates ketosis and NAD+ at cytochrome 1. Did you know the catabolism of tryptophan is linked to the creation of NAD+? It turns out, in cold, ketosis and low light levels are all linked normally in the environment. This tells us melasma, at its core melasma is a circadian mismatch and not a true disease state. What links them all together is an altered alpha MSH, altered estrogen, and abnormal progesterone levels in cold environments due to a lack of UV light and excessive blue light exposure. Melasma is a disease

caused by a circadian mismatch that leads to a low redox potential in tissues derived from neuroectoderm. Neuroectoderm tissues are the brain, skin (melanocytes), and parafollicular cells of the thyroid gland. This affects the Vitamin A and D cycle.

The best option for treating melasma is avoiding carbohydrates, rehydrating the insides of your cells and using a high fat diet to reverse the hormone signaling. The short answer? Improve your redox potential in your skin!!! Your goal is to alter alpha MSH signaling in your brain and lower your estrogens by changing your environment to read the signals correctly. The sun is critical in helping melasma which is exactly opposite what the skin doctors will tell you.

An increase in the normal level of alpha MSH will cause a darkening of the skin because of OPN3. Lower levels of ACTH will also cause darkening of the skin. Melanocyte-stimulating hormone increases normally in humans during pregnancy and blue light exposure. In pregnancy, progesterone rises dramatically as does water retention. Pregnancy also increased estrogens, and its causes increased pigmentation in pregnant women. Cushing's syndrome due to excess adrenocorticotropic hormone (ACTH) may also result in hyperpigmentation, such as acanthosis nigricans in the axilla and melasma in the skin of women. Most people with primary Addison's disease (low ACTH) also have darkening (hyperpigmentation) of the skin, including areas **not exposed to the sun**; characteristic sites are skin creases (e.g. of the hands), nipples, vulva, scrotum, and the inside of the cheek on the buccal mucosa. New scars also become hyperpigmented when cortisol levels are altered. Older scars before the ACTH or cortisol alterations do not darken. People with metabolic syndrome also get diabetic dermapathy. This occurs because melanocyte-stimulating hormone (MSH) and adrenocorticotropic hormone (ACTH) share the same precursor molecule, Pro-opiomelanocortin (POMC). Here you can see melasma is tied to altered cortisol/melatonin

cycling and excessive estrogens. These two things are linked directly to the 3 legged stool.

In the EMF 4 blog post, I told you that vitamin B3, niacin, simulates a ketogenic diet. Niacin is a very unusual vitamin. Niacin is a methyl acceptor in most biochemical reactions. At a low dose of 2 grams a day, niacin acts like a drug, not a vitamin. This implies that niacin can also alter its function depending upon the environment it is used within. Its career began with Abraham Hoffer, back in the 1950s on psychiatric wards. Hoffer tried massive doses of niacin on schizophrenic patients. The idea was to see if they had a poor response to "normal" doses of B3 which could be overcome by excessive doses. Ironically, it worked very well back in the 1950's. Even today, people are linking the redox potential to problems in schizophrenia but they are not connecting the dots why it no longer works, as I am here. It also pulls back the veil on why ketosis has a powerful effect on tertiary and quaternary protein folding in the maturing brain. Schizophrenia is a disease of young males 18-25 years who's brains are not fully myelinated because of a defect in the TCA cycle.

Niacin works best when the redox state is higher, not lower. In Hoffer patient's back in the 1950's he got good results from this action. today, if his idea was re done in the same patients I would predict they would have a bad result because of the excessive non native EMF force in our ionopshere. If you have the COMT defect you really will struggle; in cases like this will not do well and you will flush badly on niacin.

In Hoffer's case, he was laughed at by my profession, because most researchers and clinicians had no idea what the redox state was in these patients. Niacin helps decrease the oxidative load placed upon mitochondria to make all these new proteins in the brain. It saves the brain energy and increase water binding sites on proteins. This means it is a thermodynamic solution to a poor energy state. We can see all

these effects on diffusion weighted MRI's and fMRI studies today. I have a blog on that coming down the pike on this.

I have said repeatedly on the blog that ketosis is coupled metabolically to the circadian signaling of light and the magnetic field. If you are a ***woman with melasma it is a big sign you have a poor redox potential in your skin because the three things involved mentioned above.*** This means your circadian signaling are all off in you in a big way. The way to find it is reviewing the Vitamin D and A cycle in your body that I spoke about in the pseudotumor cerebri blog. This is why this problem is so difficult to treat for doctors. You have to perform a circadian reset to make a dent in this situation yourself. The doctor is powerless in changing your environment, but you can. Remember that your mitochondria sense these variables minute to minute daily. The "change programs in mitochondrial" (autophagy and apoptosis) can adapt to them well, if the redox potential remains high. This is why I believe both disease can be reversed. Doctors can not change your environment, however, but they should be able to evaluate you for a circadian mismatch.

So how does niacin work in melasma? Niacin is a significant antioxidant and anti inflammatory for anything derived from the neuroectoderm. This means it should work wonders in skin and brain diseases. Niacin stimulates the production of NAD+ in mitochondria. Niacin uses a special receptor to work. Just like SHBG and lysyl oxidase, its precise molecular structure has not been fully elucidated because the receptor changes its molecular arrangement based upon the redox potential present. Moreover, this receptor uses beta hydroxybutyrate (BHB) as a ligand to act. **Niacin will not work ideally if one is dehydrated within the cell or if you have a COMT defect.**

In fact, if you are dehydrated and have the COMT defects, you will likely suffer from niacin's famous red flushing more vigorously. Avocado's within a ketogenic template are

especially helpful to those with a COMT defect when they use niacin. Niacin is a special vitamin that has a direct effect on lipid metabolism. BHB a ketone body that is naturally made by our liver in times of starvation. This also happens when we restrict carbohydrate. Our gut flora becomes more complex when we do this too, and it helps make more electrons for us to reverse the disease. This is all designed to happen naturally in winter when carbohydrates are not normally in the growing season making them unavailable without man's modern interventions.

We can also see the effect when we use coconut oil as part of our diet. Coconut oil is largely made up of medium chain triglycerides (MCTs) which will also produce extensive ketones even when carbohydrate is present in the diet. MCT are hydrolyzed in the gut's wall to free fatty acids which then enter the portal vein for a direct trip to the liver. In the liver, they are rapidly oxidized and converted to ketones which raise NAD+ levels at cytochrome 1. Glucagon is a key metabolic signal within ketosis that stimulates autophagy, as you will find out, as the series rolls on. **Autophagy runs the ubiquitination pathways** in your body, to clear away misfolded proteins and bad mitochondria. In melasma and Hashimoto's these things no longer work well in you. This is why problems arise. Your change programs in your mitochondria are altered.

So how does coconut oil help? MCT don't get in to chylomicrons like regular short or long chain fatty acids do. This helps explain why MCT do not raise VLDL particle numbers when we test for them. High fat low carbohydrate diets naturally produce ketone bodies regardless of the season if a human employs the diet. They also have the ability to elevate HDL cholesterol levels too. Niacin has the very same ability as well.

THE GEEK SECTION: All women who have melasma have a huge

issues with water chemistry at some level. Most patients are all dehydrated inside their cells, and the number one reason is due to excessive non native EMF. Some will have the COMT defect but this is not the bulk of patients. The astute clinician must consider this option in a patient with a good BUN/creat ratio. Because of this unique circumstance, they also tend to have high estrogen levels and very low progesterone levels. They also have abysmal DHEA levels, high IL 6 levels, and poor sleep. They also tend to eat more carbohydrates out of season steepening the effect. These clinical facts all work in concert to create an altered field in their cells to produce hyperpigmentation by over expression of melanin from melanocytes. The hyper-pigmentation is linked to altered calcium and magnesium regulation in their skin cells. Taking more calcium or magnesium do nothing for the intracellular voltage channels in their cells to help their skin color.

Using calcium channel blockers might help, but rarely do dermatolgist even know about this possibility, because they do not understand how the 3 legged stool is behind melasma cases. Altering your native environmental EMF is the smartest first move you can make, if you have this disease. Checking your 23andme levels for COMT defect is a good next step.

Why is calcium linked to this condition? Calcium is released from skin cells when excessive levels of EMF are present. There is a big thread at the forum making all these linkages for you. This has already been proved by ion cyclotron resonance experiments in mentioned in EE4. This is a physics phenomenon related to the movement of ions in a magnetic field. In today's modern world, the Earth's magnetic field is no longer in its native state.

Today, we live on an alien exoplanet compared to the one we evolved upon. This is how ladies on modern Earth get diseases that simulate the effects of non native EMF and micro gravity that astronauts get. <<<<<Read this.

There is “excessive energies in the ionosphere”, and this alters the interactions between water and proteins by altering how they can or can not use electrons and protons. When one is dehydrated, and eating carbohydrates consistently out of their photoelectric growing time, it creates a huge problem at cytochrome one (NAD+) in the mitochondria. What is that problem?

It affects the NAD+ ratio’s found in these women’s mitochondria directly. This no longer becomes a food story or hormone story, it is an electrostatic charge story of the skin’s mitochondria tied to tryptophan. This is precisely why dermatologist are perplexed by this condition. They do not understand how physics underlies all these changes. This really is a problem involving the Second Law of Thermodynamics at its core.

In my opinion, all foundational sciences should be a quest for the most intimate understanding of nature. It is not to represent any industry set up by man, for the purpose of validating existing theories and indoctrinating students in the correct ideologies.

Dermatology uses Big Pharma Rx’s , to try to solve this thermodynamic problem. This is my definition of insanity. This is why I find it ironic that we allow either of these people to continue to make recommendations about our sun exposure. Big Pharma is more interesting in making customers, and not cures. Dermatologist’s should begin to realize how ludicrous it is to think something fundamentally natural in our sky for 4.4 billion years, is now somehow killing us now. It is one of the ‘givens’ in nature’s thermodynamic equation for life.

The changes to our redox potential, occur because the excessive energies in our ionosphere, however, is “the big issue” everyone is missing. Any basic engineering student will tell you this. My son is in his third year of of his

engineering degree, and he gets this implicitly. He still can not believe that biologists do not understand this simple thermodynamic issue. Well, you all know they don't, if you been a doctor and have either one of these diseases. This is why they invented sun screen! When you use sunscreen you take away the early warning detection system built into to proteins…….called sunburn. Ironically, this is why melanoma has a higher incidence and prevalence in those who use sunscreen! It allows you to stay in the sun longer so the electromagnetic power of the sun can further alter these new proteins to create new problems.

It should be these enigmas, the mysteries, and paradoxes that take hold of the biologists imagination, leading it on the most exquisite dance where the quantum world makes sense of biology.

When you understand the essence of this blog, you begin to realize why biochemists are clueless. They all believe biochemistry has to depend upon equilibrium. It turns out classical equilibrium constants are quite irrelevant in biology. The only time life is at equilibrium is when it dies, in rigor mortis. Life is designed to me metastable to react to all events in the environment. Life stores energy and information in its proteins that make up tissues using quantum actions. When you understand this fundamental process, you begin to see how u*seful work can be done by molecules in proteins by a direct transfer of stored energy in electrons and protons.*

These particles must be captured and held in place or controlled to access this potential energy and information. When these particles are captured in proteins, their energy is stored. The thermalized energy the sun brings to us cannot be converted directly into stored energy so it is deposited in water for later use. Water is life's battery. That is how biology uses the Second Law of thermodynamics in a nutshell folks.

Sunlight is all about physics. It is part of the electromagnetic spectrum and is completely behind out evolution. It is a constant in the system of biology. What is not a constant is the variables related to proteins, electrons, and protons. I believe to make solid recommendations you need to know a little bit more than the association of the sun's electromagnetic spectrum with water and the magnetic field. I also believe this is why melasma is not well treated in dermatology today. The same holds true for Hashimoto's disease. The key trigger is not well understood and neither are the mechanisms that follow.

They are all linked to protein chemistry changes and the interaction of their water hydration shells ability to deliver electrons and protons to the protein side chains. It is not a methylation defect SNP story, as most believe. Having the SNP's just increases the severity of the disease response. **And if you think taking supplements in this situation is correct, nothing could be further from the truth.** This is akin to using sunscreen. It is the excessive non native EMF that causes these proteins to alter to cause new proteins to emerge with ***new physiologic functions***. This is why autoimmunity is exploding in today's modern world. Most alternative medical professionals do not appreciate how the ubiquination pathways and micro-autophagy work with non native electromagnetic forces. *If they did, supplementation would be the last thing they would espouse.*

The decoupling of the photoelectric effect from foods and environment are why we develop the problems we see today. We remain unaware what couples all these environmental links back to the 3 legged stool that varies by season. Food is the signal that links the photoelectric effect to the magnetic field that ions are in and this directly impacts the level of alpha MSH in the brain. Whatever the frequency of the electromagnetic field strength is, strongly dictates how biochemistry reactions will be altered in us, for the better

or the worse.

Today's CPC is another big clue that ties many blogs and levees of the Quilt together. It shows you how "scales" of things work up and down in biochemistry and in the quantum world simultaneously: Oxidative stress makes calcium go from endoplasmic reticulum/Golgi appartus to mitochondria, where it directly inhibits complex 1 function. It also alters tertiary and quaternary protein folding in proteins made in the endoplasmic reticulum and Golgi apparatus. *This is a post transcriptional event.* This means our nucleic acids CAN'T BE THE REASON DISEASE HAPPENS!!! WHY? Because it happens **after** the protein is made. What controls the beginning translation of every human protein?

This means non native EMF acts directly at cytochrome 1 to cause a metabolic shift. This is an reactive effect that causes a molecular change in these proteins which changes how they can function. *A metabolic shift is a synonym for a phase transition.* As such we should expect to see more NADH and less NAD+ is present in these patients. This is why these patients are so sensitive to foods like carbs which make NADH in excess. They crave what is killing them because they feel they need the carbs to replenish poor ATP stores quickly to fuel glycolysis and the PPP because they cannot use the TCA or urea cycle. This gradient is even steeper in those with MTHFR SNP's in poor quantum yield regions. This is why all autoimmune diseases rise as we move away from the equator.

The antidote is ketosis with sunlight, avoidance of all blue light, and in the beginning, it won't make you feel great, because of the metabolic shift that occurred in the proteins of cytochrome one. It has to be altered by our mitochondrial change programs to improve matrix kinetics!!! That shift happens because the proteins in mitochondria have changed to try to down regulate ROS from carbohydrates to protect the host. With time, however, you will remove those defective mitochondria and you can slowly reverse the process using

autophagy in mitochondria. Autophagy, if regulated properly, ensures the synthesis, degradation and recycling of cellular components, like the mitochondria in the example above. When the redox potential is poor chronically, as it is in the context of disease, autophagy has been seen as an adaptive response to survival.

Autophagy has its own levee in the Quilt. Autophagy promotes life, via recycling, rather than death. When you have melasma or Hashimoto's you are closer to death than to life because your time crystals are being replaced too fast. *Recent discoveries have shown that almost every genetic, dietary, and pharmacologic manipulation proven to extend lifespan activates autophagy as part of its mechanism of action.* **Autophagy is broken in these diseases.** Apoptosis occurs more. Autophagy and apoptosis are both programmed "change responses" in mitochondria and has several sub-pathways of controls. Unlike autophagy, apoptosis only deals with cell suicide and death. What determines which program is selected? The redox state of the cell. BOOM.

If the redox potential is chronically low or faces a severe sudden drop, in these cases it appears to promote cell death and morbidity. Prolonged autophagy activation leads to a high turnover rate of proteins and different organelles. Autophagy is a protein degradation system used to maintain *protein homeostasis*. It has been found that inhibition of autophagy often leads to apoptosis or cell suicide. In tissues with low amounts of mitochondria, like a beta cells, this causes diabetes. In the brain or heart, which have large numbers of mitochondria we see slowly eroding function called organ failure. This is what happens in neuro-degenerative diseases and heart failure. Recent studies reveal that defects in autophagic degradation selective for mitochondria (mitophagy) are associated with neurodegenerative diseases, highlighting the physiological relevance to the organization cellular functions within the Second Law of Thermodynamics.

Another link to the second law of thermodynamics and the mass equivalence relationship of physics, I spoke about in EMF 2, is that mitochondrial shape defines different types of autophagy a cell undergoes. Remember in EMF 2 when I told you we get fatter, when we lose energy? When a mitochondrion loses energy or inforamtion it also **gets larger** in volume. This is also what happens in a star in any galaxy. *This shows you how the laws of physics are conserved from the largest objects in nature, to the smallest in your cells.* This enlargement or volume change is transmitted to the collagen cytoarchitecture of your cell because it is a phase transition and alters collagen's piezo-electric ability. This causes cellular stress due to a rise in cortisol. Cortisol steals electrons from collagen and un zips its triple helix. The cell then increases its volume. This affects your cells tensegrity. This information is also transmitted to the hydration shell around the collagen's triple helix and affect the EZ of water. This highlighting the interplay between the morphology of the organelle and complex cellular responses.

Consider this abstract from here: hyperlink

Abstract

"In *Saccharomyces cerevisiae*, mitochondrial morphology changes when cells are shifted between nonfermentative and fermentative carbon sources. Here, we show that cells of *S. cerevisiae* grown in different glucose concentrations display ***different mitochondrial morphologies.*** The morphology of mitochondria in the cells growing in 0.5% glucose was similar to that of mitochondria in respiring cells. However, the mitochondria of cells growing in higher glucose concentrations (2% and 4%) became fragmented after growth in these media, due to the production of acetic acid; however, the fragmentation was not due to intracellular acidification. From a screen of mutants involved in sensing and utilizing nutrients, cells lacking *TOR1* had reduced mitochondrial fragmentation, and ***autophagy was found to be essential for this reduction***.

Mitochondrial fragmentation in cells grown in high glucose was reversible by transferring them into the conditioned medium from a culture grown on 0.5% glucose. Similarly, the chronological lifespan of cells grown in high glucose medium was reduced, and this phenotype could be reversed when cells were transferred to low glucose conditioned medium. **These data indicate that chronological lifespan seems correlated with *a mitochondrial morphology* of yeast cells and that both phenotypes can be influenced by factors from conditioned medium of cultures grown in"**

If you are following the Quilt you should be visualizing major things going off in your head now**……**

Autophagy only happens during sleep.

Autophagy only happens during sleep. Re Read CT 7!!!! This is why sleep is regenerative and based around the DC current in the brain and in the peripheral nervous system. Remember, ketosis with sunlight makes a ton of NAD+ (so does niacin), and it is why ketosis is the antidote to non native EMF and not a diet consisting of carbohydrates 24/7. Think EMF4 blog post, if you are following this all. Non native EMF increases energy in the native environment and this requires a change in the fuel source to alter the tissues ability to revert to a new phase transition back so it can work properly as designed. When the field of action is altered, you must also realize you have to alter the other variables in the equation. Your doc can't live your life for you!!!!

This is what an engineer does when he designs a new machine. They look at the problem, and then define the given variables in the system. They know the effect they wants to achieve, so they design "the machine" using the variables they can alter, and does not focus in one the ones they can not alter. Life organized around these principles as well. This is what the three legged stool in Energy and Epigenetics 4 were all about.

RADICAL IDEA ALERT: All of this leads to an inconvenient truth. When you really understand the core of this blog you begin to realize that basic idea that *electronic induction* changes how biochemistry can operate because the new proteins formed by altered protein folding all have emergent properties. Folks, this is quantum evolution. Darwin's ideas have been upgraded. Some will drive the forward progress in evolution as they continue to act with the electromagnetic force over time, and others will cause neolithic disease under the direction of the very same electromagnetic forces around the properties in these emergent proteins. This is how evolution works. It is not a RNA/DNA level event as we believe today.

This idea is foundational to all life on this planet and it also belies why many proteins are conserved across many species because they have sensitive and special quantum abilities to capture the information and energy in electrons and protons. The electromagnetic force that is released by a star back into space controls all these charged particles and bonds all atoms everywhere in the known universe. Light is the glue for all forms and phases of matter on our planet or anywhere else. These physical facts underlie all biologic function everywhere on this planet. Moreover, when you see this quantum mechanism, you begin to realize where evolution likely came from.

It is a physical process, based in the quantum world of action, of how the electromagnetic force controls charged particles on proteins. Everything in quantum theory tells us that molecules never stand still, and proteins are no exception to this rule. It is already well-known that molecules with the same intrinsic frequency of vibration not only resonate over long distances, but they also undergo coherent excitation. Life is designed to be filled with energy and information at all times, to obtain optical coherence in our protein/water lattice. The only time it is

not true is when life if dead. Under these circumstances, our tissues can also attract one another over long distances when the system is functioning as designed.

How would "coherent optical excitations" make the system sensitive to specific weak environmental signals from sunlight or the Earth's magnetic field? Such a "weak signal" will only be received by the system only when the system is 'in tune.' Being in tune is a euphamism for metastability, and having all the water/collagen semiconductors in your body "sticky" to catch electrons and photons well. The native magnetic field is what makes you sticky in case you were wondering!!! Another way to say it? This means the cell has to be filled with electrons, protons, and water around proteins to read and react to the environmental cues. **This is how your redox potential is created.** Today, the weak signals of the native electromagnetic spectrum can not be sensed, because of our modern behaviors and beliefs. You are "out of tune" in a big way. Moreover, when it is not able to sense the native cues, cell signaling declines, and disease comes from no where. This brings us right back to why Hashimoto's and melasma have exploded in 60 years.

This allows the rules of quantum engagement to create emergent new proteins in us, when these things go awry. Some of these proteins will be able to drive further evolution (why some people now are immune to HIV in Africa) while others result in new diseases that show up out of thin air like prion diseases or autism/cancer/AD/T2D/obesity. Connecting any dots yet? Today's diseases are tomorrow's future cures, or evolution in action.

The modern world can't see the obvious health solution because they can't see the real problem, literally or figuratively. What one should do when one sees a situation we do not like is to change it. If we perceive that we can not change it, then we must begin to perceive it in a new way to solve it.

In the disease state, the power of the electromagnetic force will continue to exert its force on the disease and either result in the extinction of the protein or form a new emergent protein that allows for a way out of the disease state. This is precisely how hemochromotosis and cystic fibrosis evolved in humans. In this way, you begin to realize how diseases can be the an evolutionary foe initially, but as time elapses and the electromagnetic force continues to work to change the proteins further to an evolutionary friend. With time, under the direction of the electromagnetic force, they will be extinguished or they will lead to a new solution for the species. In this way diseases of yesteryear could be an evolutionary friend or foe. When you also realize that all humans inherit their mitochondrial DNA from their mother's, it becomes no surprise how this metabolic shift in mitochondria has speed up evolution from the K-T event; as such, it has sped up the changes in mitochondrial proteins that make up our cytochrome proteins. In this way, a child can be born already with this liability, into a world filled with non native EMF all round it. These physical forces will induce further epigenetic changes in proteins, leading to the explosion of new disease for which we seem to have no answers for. This is where all of today's neolithic disease begin. Many of yesterdays diseases become tomorrows solutions or extinctions under the physical laws of nature. Evolution is a physical process of nature, not a biologic one. Controversial, huh? Good. Because when something is fundamentally wrong, you must change the way you look at the process.

GEEK FEST:

When calcium efflux from cells occurs it also activates TCA cycle dehydrogenases in concert, which also means more NADH is generated and less NAD+ is made. Now recall that NAD+ activates the sirtuin pathways, specifically Sirt3, which regulates mitochondrial superoxide dismutase. When this

happens, too little NAD+ chronically means lower MnSOD activity and too much superoxide is made. This increase ROS big time to cause major cellular damage everywhere. When it is made in small pulses, this helps us signal cellular energy balance well. When it it is excessive things go awry and gateway disease result. This is the circle of destruction our mitochondria face when you marry excessive non native EMF and 24/7 carbohydrates in your diet.

When you understand the linkage of NAD+ and sirtuin activation how does this link of the environment of mammals? The short answer is the hormone Irisin. I mentioned it in the Cold Thermogenesis series but no one paid much attention to that breadcrumb. Read the Nature paper from 2012 on how they found it (last cite). It is the hormone of how muscle talks to WAT. Why would a ancestral human need that when there were no Gold's Gym's 1 million years ago? The irisin story is not an exercise story it is a CT story. Irisin is the hormone coupled to cold environmental temps for shivering thermogenesis. What would fuel it? Proton uncoupling from FFA coming from white fat cells heading to newly transformed BAT to burn the fat to stave off hypothermia. When it is cold is the light cycle long or short? Short. This means no photoelectric effect to grow carbs. Irisin = ketosis. This is why they are linked by Lady Evolution. The key issue for mitochondrial efficiency and capacity then becomes Ling and Pollack's idea of how the proton force would move in cold in water. It's the exclusion zone (EZ) from the radiant energy of proton uncoupling that accomplishes this task. This is really why mammals are warm blooded.

These cycles are deeply coupled in life using biochemical reactions tied to quantum effects of subatomic particles. How is this all mediated? UCP. Remember that from the early leptin blogs? What are UCP co factors? Leptin and T3. Maybe you begin to see why my CT protocol works for diabetes and non native EMF, and why people do not see the world as I have for

a decade now. Cold, ketosis and hydration are all linked by nature's electromagnetic spectrum, by way of our proteins.

The proof is in how muscle fat and mitochondria work in that environment, via Irisin. *None of this can happen in a women with melasma or Hashimoto's.* These are *two gateway diseases today,* that may lead to a solution if they continue to be changed under the direction of the electromagnetic forces on this planet today. What happened in paleolithic times is immaterial, and now more of an ongoing fantasy for a group of modern humans, who continue to continue to tinker with technology while thinking their food will solve all their problems. BULLOCKS. It is a step in the right direction, but it will never do what this blog is showing is possible.

I believe I have better ideas based upon real evolutionary design. Ladies with Hashimoto's and melasma have mitochondria in different tissues all undergoing the same mechanism. They are being slowly and steadily changed by the modern electromagnetic force we are exposing ourselves to and this leads to a steadily broken down mitochondrial stem cell resevoir. This is how mitochondria are crippled by modern day circadian mismatches. This is how change happens in a cell here on Earth, in astronaut in space, or anywhere else in this universe. It is based on the physical laws of quantum mechanics that rule the day everywhere.

THE TAKE HOME All women who have melasma and Hashi's have a huge issues with water chemistry due to blue light somewhere in their quantum being. They are all dehydrated inside their cells, and the number one reason in our environment today is due to excessive non native EMF, altered B vitamins, and low iodine levels, or a MTHFR defect. Because of this they also tend to have high estrogen levels and low progesterone levels due to the way modern humans eat out of season. No drugs will fix a circadian mismatch even if you have a MTHFR defect.

Supplements: If you make it…….you're not designed to take it.

You must fix your environment first.

Fat and Protein are gateway drugs for modern day sugar burners to becoming a full fledge PPP mammal……..you are all learning about the magic of the Quilt now.

People with these issues need to learn how to maximize cold thermogenesis using the Fournier effect and eat a ketogenic diet with a lot of MCT. This is how one controls for excessive EMF in our native world to reverse a disease. Using MCT's topically on the skin would also be a smart move for those with melasma. The reason dermatologists think sunlight makes melasma worse is because the new melanin in their skin is being further altered by sunlight to new emergent proteins that none of their drugs work on. Instead of avoiding the sun, and further lowering your vitamin D levels, change the electromagnetic signal to your mitochondrial proteins you can control, to alter the movements of electrons and protons to offset the sun's effect.

There is no greater tragedy than bearing an untold story inside of you. Science reminds us that not all of life's stories are observable: there are still so many stories to be told. I just shared one with you, a big one, in fact.

BOOM

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