UBIQUITINATION #4: UBIQUITIN'S CONNECTION TO LIGHT

READERS SUMMARY:

1. If you do not get enough sleep, can low stress become high stress just by changing the light we live under?

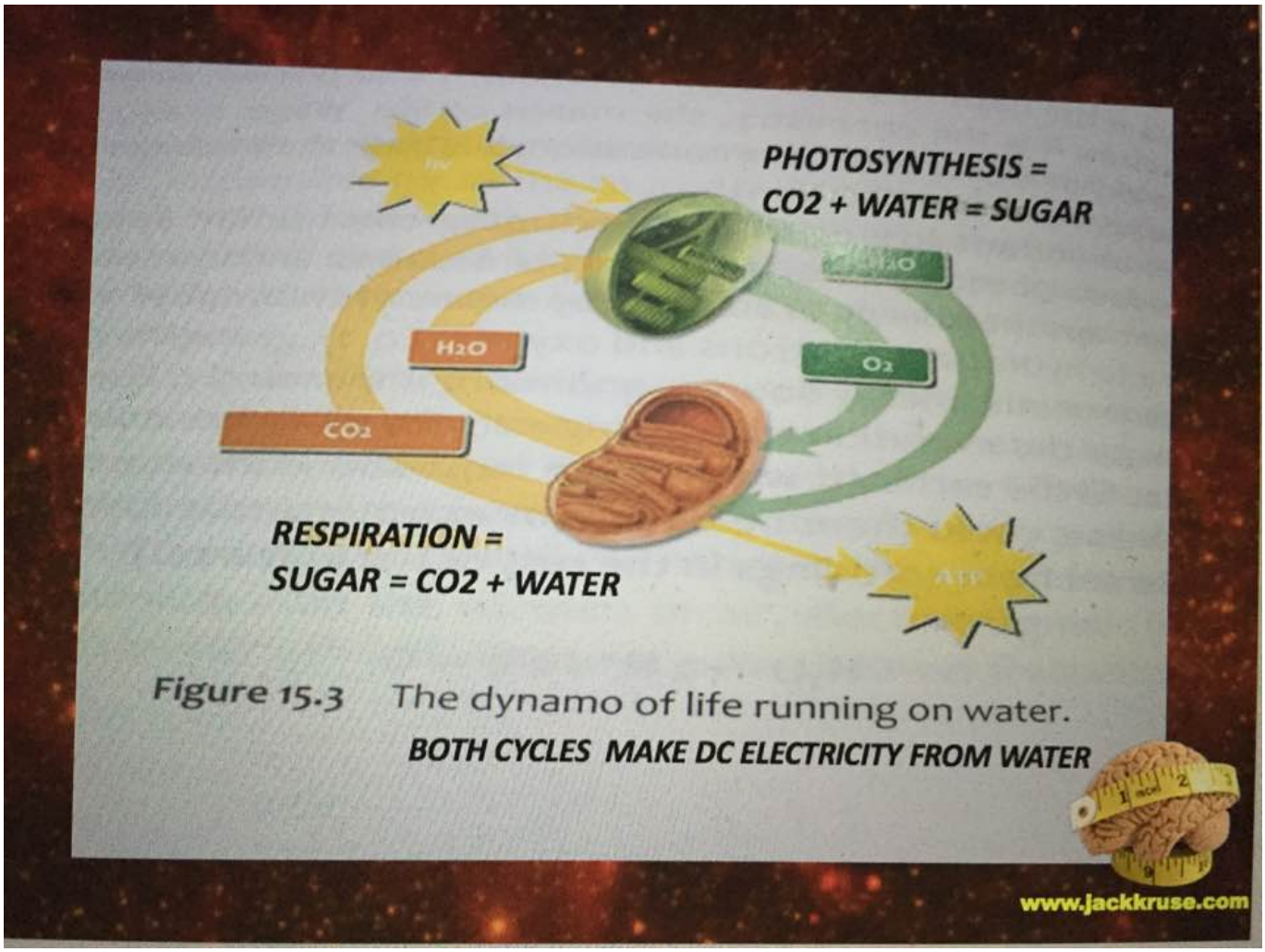
2. If you live in a city, especially in a high rise, can a paleo diet become a SAD?

3. Can diet repair a defect in light perception or artificial light stimulus?

The whole purpose of knowledge is to grow it to wisdom by shining your "light" on to mirrors and directing it into the windows of man's perception. This is how we enrich lives. We control the stream of light to illuminate new truths. Most people contain these mirrors, but few use them. They reflect the moods and emotions of the times; bringing light to bear on the dark corners where troubles fester in life. Today's blog is a beacon for the science of light.

In Ubiquitination 1 and ubiquitination 2, you should begin to realize the story of how life uses the photoelectric effect is a complex dance of selecting the correct frequency to gain the desired effect on lipids and proteins. Sulfation of lipids and proteins by sunlight has a deep optical effect on tissues in variable ways because of the interaction of light, gravity, non-native EMF. This science is controlled by quantum and optical physics and not your diet. This story links light to DHA in a very counterintuitive manner, to most. **This linkage is codified in melatonin (often dopamine too) via altered**

ubiquitination cycles in our cells. Symbols can be beacons for truth or symbols of a facade. Symbol and myth are ways of bringing order and form into life's chaos. What is the difference between poets and mystics? The mystic nails a symbol to one meaning that was true for a moment but soon becomes false. The poet, on the other hand, sees that truth while it's true but understands that symbols are always in flux and that their meanings are fleeting. Consider me a theoretical quantum biologist who's words rhyme with nature's game plan for solar light's actions on our tissues. In yesteryear's food was symbolic of wellness and love, but this relationship is disconnected now by man's ability to create foods not connected to the Earth's cycles under the alien light. People forget the entire food web is controlled by the sun via photosynthesis. Modern "fake food" and artificial technologies, make food an inadequate symbol of wellness or love. People have been habitualized into believing all food and technologic progress have only a positive connotation for wellness and love; that would be modern man's greatest error, in my opinion.



Mankind has looked outside himself for answers related to wellness. It always amazes me how many conquests mankind has had in exploring outer space, and yet fails to explore their own inner space for the solution. Today we are going to look deep within us, how sunlight is a healing EMF and while manufactured light devastates optical signaling in us to lead to mitochondrial demise.

Food is a variable whose context changes, as the environment varies as light changes diurnally and in circadian fashion.. As Energy and epigenetics, 4 intro showed, nothing has changed more in our modern world than our environment since 1950; Modern humans crave luxury and efficiency to the detriment of nature’s cosmic use of light because what man has created suited his desires and not his biology to make life easy via technology. The more of it you use, the less DHA is in your central retinal pathways which connect the retina to

the SCN. The SCN sits right above your optic chiasm and must work faster, as the central circadian clock; using the physics laws that dictate time keeping using light and gravity, all tissues and organ clocks below its altitude in your head, must run slower for signaling to work properly. If the relativity of light and gravity are off for any reason, biochemistry action is altered dramatically in every cell, because enzymatic fluxes are altered. All cells have their own timekeepers. In this way, all tissues tell time relative to the SCN. All enzymes require water and proton tunneling to function. They rely on proper timing. These processes are also subject to universal physical laws to maintain their own integrity. This is why atomic clocks driving navigation devices for Garmin, orbit above your GPS devices; they have to run 38 microseconds faster than GPS devices on Earth's surface. If they don't, they would be off ten kilometers in most GPS applications. The same science controls your SCN and organ clocks. Become aware that your SCN needs a constant source of DHA to run quicker, to remain constantly ahead of your organ clocks to make sense of the symbols contained in food, called electrons. **This reason is why every human gene, has clock genes ahead of them in your DNA, to pay attention to this relationship between light and gravity.** The human retina has to have more DHA than the brain to run the atomic clock in you, the SCN, so your life can manifest properly, and you can make sense of how to use food. Don't believe all of what you read about food. Blue light is what destroys DHA quickest, and in turn, lowers melatonin, and alters Vitamin D sulfation in the skin and gut.

MELATONIN AND UBIQUITIN

This is why low vitamin D3 levels are always associated with low sulfate levels in the skin, gut, and brain. Today's modern microwaved world blocks us from using the sun as our cells were designed. Sulfate needs a natural source of sunlight to work properly. The AM sun provides the perfect

light frequencies for this photocatalysis. Melatonin is a nighttime ferry that brings sulfate from the small bowel to the pineal a night for distribution through the brain by way of the CSF. This is why the pineal gland has no blood-brain barrier. The gut communicates directly to the pineal in this way. These sulfates generated, both from the skin and gut, are then stored in the pineal gland as melatonin sulfate. At night, the sulfates are delivered to the ventricles and CSF to distribute sulfates to the brain during sleep and autophagy.

BIOLOGY DETAILS OF LIGHT: Serotonin is synthesized from tryptophan, which is transcriptionally activated by vitamin D3 sulfate. EPA increases serotonin release from presynaptic neurons by reducing E2 prostaglandins. DHA has a massive influence on the serotonin receptor action, by increasing cell membrane fluidity and improving tunneling of electrons and protons in postsynaptic neurons in the gut just behind the enterocytes ***that face the light releasing microbiome.*** These connections head directly to the floor of the fourth ventricle in the brain, at the area postrema. Today modern man faces globally low sulfated Vitamin D3 levels for many reasons. Dermatology beliefs, clothing, sunscreen, and lack of exposure to AM sunlight are important variables to consider. But society has also been depriving themselves of vital EPA & DHA in seafood for 70,000 years since we moved away from shorelines, as humans left Africa.

Modern functional medicine and ancestral supporters often call and advocate for carbohydrates in their diet, because of chronic low serotonin penetration in the brain-gut axis. **What few of them realize is that it is tied to a lack of DHA in the gut and brain, not a deficiency of carbohydrates in the diet.** DHA turns light into a DC electric current it is capable of turning a DC electric current back into the light. This is why DHA dictates what proteins can be in cell membranes. This is why Epi-paleo Rx ideas were innovated, by me, over ten years ago. When you consider this linkage, it should no

longer be a surprise why modern man suffers from suicide, mental illness, and depression at unprecedented rates in a rapidly changing microwaved world; moreover, this might explain why the globe is facing a resurfacing of unsocial behavior in many cultures and religions.

NEUROSURGERY LESSON: Serotonin is made from the dietary breakdown of carbohydrates especially in foods high in phenylalanine, leucine, and tryptophan. These are found in fruits that grow in ***long light*** conditions. Serotonin balance in the brain is just that…..a balancing act, between light frequency, and DHA tissue concentration. If that relationship is not tightly yoked to ubiquitination rates, you lose that quantum connection to uncouple signaling in the brain-gut axis. Once the serotonin is absorbed are collected in the enterochromaffin cells of the gut. There it is transported in the brain's vagal and serotonergic nerve tracts. Serotonin is closely regulated in the gut and brain by the ***presence or absence of light***. The microbiome bacteria release a lot of light naturally, along with molecular $H_{2;}$ it is the absence of light, reduction of H_2 from the gut, that stimulates the production of melatonin from serotonin. This is another reason why late night eating is detrimental. Eating food at night stimulates light release from the microbiome. This is why snacking, post-dinner is frowned on in the Leptin Rx.

Recall, excess serotonin is converted to melatonin by the brains' pineal gland when darkness is present for at least 3-4 hrs. Excess serotonin is normally converted to melatonin by the brains' pineal gland when a light is absent on our skin and from our gut for at least 3-4 hrs. Of course, this assumes that your pineal gland is not calcified, and is working well. You should not assume this because most modern humans have some degree of calcification in their pineal gland because of the use fluoride.

PHYSICS OF FLUORIDE: *Fluoride is a dielectric blocker in cell*

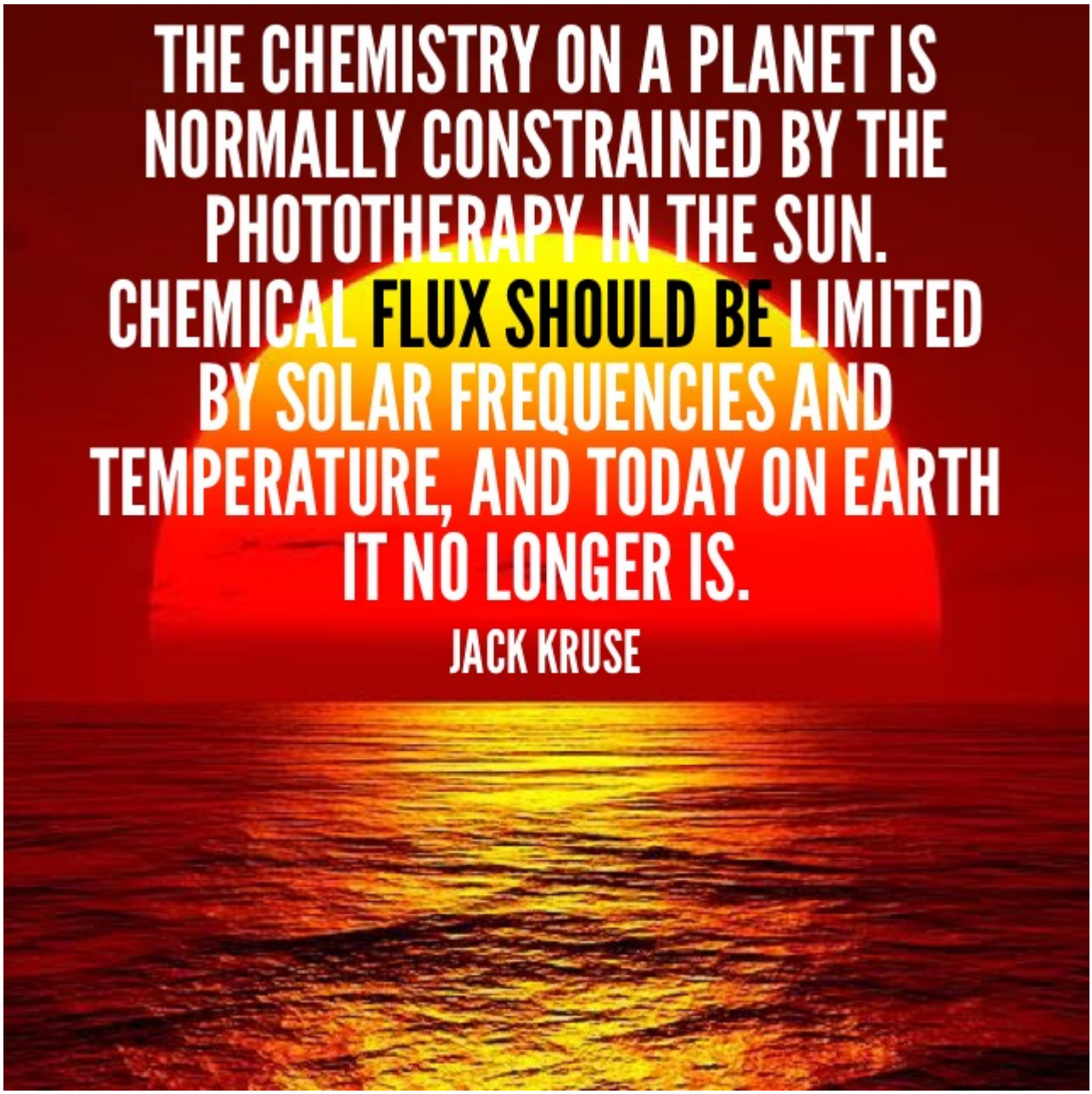
water and is associated with calcium efflux in the pineal gland because it discharges voltages that can be stored in water's hydrogen bonding network. A dielectric material is an insulator and does not conduct DC electricity. A nerve cell (or indeed any cell) is surrounded by a plasma membrane, made of phospholipid. The cell can be seen as two electrically-conducting regions filled with water, namely the cytoplasm and the extracellular fluid; both regions are electrolyte solutions which are separated by a thin layer of insulator. This is the plasma membrane of the cell. ***The cell membrane, therefore, acts as a capacitor!*** *That said, when a dielectric material like water, is put together or adjacent to a capacitor, depending on the dielectric constant of the material (water is high at 78), when a DC potential is placed across a capacitor* (cell membrane)*, the charged components of the dielectric will move to either side of the capacitor and* ***hold a voltage equal to that of the potential placed across it.*** This voltage can be charged or discharged. *Dielectric blockers decrease voltage stored in water decreasing energy available to the cell.*

KEY DENTAL/WATER ALERT: A dielectric blocker, like fluoride, discharges the DC current that is normally stored in cell water and the extracellular water around cells. *In this way, fluoride lessens the battery capacity of water.* Water ceases to be an ideal repository for light or any other electromagnetic wave.

Dental studies found that both the amount and the rate of fluoride uptake increased significantly with increase in temperature. This is particularly bad news if you have a fever and are given an antibiotic with fluoride in it. This situation is worse if you are leptin resistant because CSF tends to have a warmer temperature in this state. The lowered stored voltage in CSF or cell water means DHA can transduce less light from this water; this occurs because water with dielectric blockers carries less energy in the form of the

lowered DC electric current. We can see this effect on EEG's, ECG's, and MEG data.

Lowered voltage is one of the markers I use to uncover ubiquitination alterations and altered Vitamin D3 sulfation in patients. If the serotonin excess is greater than the person's melatonin conversion, it will remain tied up in the small intestinal wall. It will eventually have to be dealt with. If not, excess serotonin can set the tone for the development of Crohn's disease and IBS. Approximately 80 percent of the human body's total serotonin is located in the enterochromaffin cells in the gut, where it is used to regulate intestinal movements. Serotonin excess is stored here but is regulated by ubiquitination rates, g*enerated by the clock gene actions to light signaling.* The brain serotoninergic nerves have the rest of the substrate stores. The plasma level is the variable part of the equation, which is 100% based on your environment, AM sun exposure, and light levels released by bacteria in your gut microbiome. If your flora is bad so is light and H_2 release. the molecular state of the H_2 also may be sub-optimal. Sleep diurnal rhythms are tied to light cycles of our sun ***or the environment we allow our gut and brain to sense.***



Cortisol helps germinate new neuron circuits during the daytime, but melatonin is critical in pruning arborization in neurons and new neuronal connections and proteins. It is very active in ubiquitination in the brain. Melatonin has been widely studied in biology for its role in photoperiodism in seasonal breeders, but it is also a potent antioxidant. Ubiquitin, a protein also widespread in living cells, contributes to many cellular events, although the most well known is that of tagging proteins for destruction by the proteasome. Melatonin interacts with the ubiquitin-proteasome system to regulate the central activity of thyroid hormone type 2 deiodinase; the subsequent regulation of T3 is central

to the melatonin-induced changes in seasonal reproduction and seasonal changes in metabolism. This is also why excessive blue light can alter thyroid function in humans. Many papers have shown that glutathionylation (sulfates from cysteine think EE 12) of this enzyme protects proteins from unnecessary degradation by ubiquitination So the sulfur carried by melatonin, may limit protein degradation in the brain.

When this process is broken, the result is low brain sulfate levels, while excessive amounts of *metals precipitate out in our tissues.* **Precipitation of metals in tissues has the atomic effect of speeding up our organ clocks in relation to the SCN.** *This completely ruins circadian signaling and speeds up ubiquitination rates and increases epigenetic activation.* ***This implies cancer maybe simply due to excessive light perception and/or loss of epigenetic control of the pentose phosphate pathway (NADPH).***

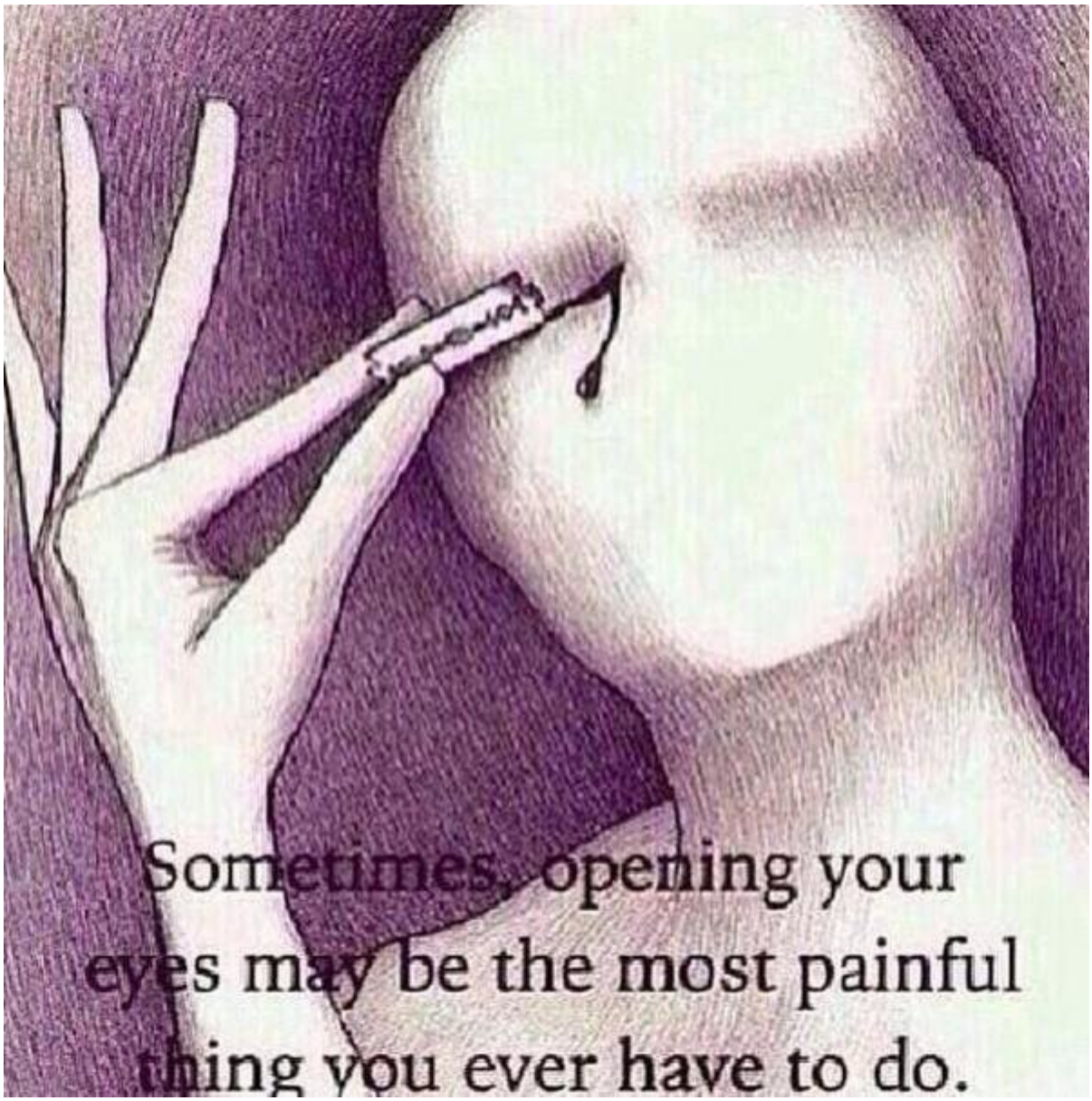
HUGE COUNTERINTUITIVE TRUTH BOMB: ***Few people seem to know that glucose downregulates the circadian clock genes that are indirectly located in front of every human gene.*** *In my opinion, this is why a Warburg metabolism is selected for in oncogenesis.* **It is the body trying to slow time down.** *The cell is trying to slow circadian clock genes down to lower ubiquitination rates caused by altered by our environment and can't. Glucose is its only hope unless the environment is changed.* ***It uses a Warburg metabolism as it's last-ditch emergency brake to a bad light environment. Hyperlink.***

This is why modern medicine and oncology are lost in curing cancer, in my opinion. It is an epigenetic disease of light. They are looking at the genes for a mechanism that is optically based.

WHY MIGHT PESTICIDES AND VACCINES BE A PROBLEM?

The metal precipitation occurs via the quantum interaction of elevated non-native energies in our microwaved world and the

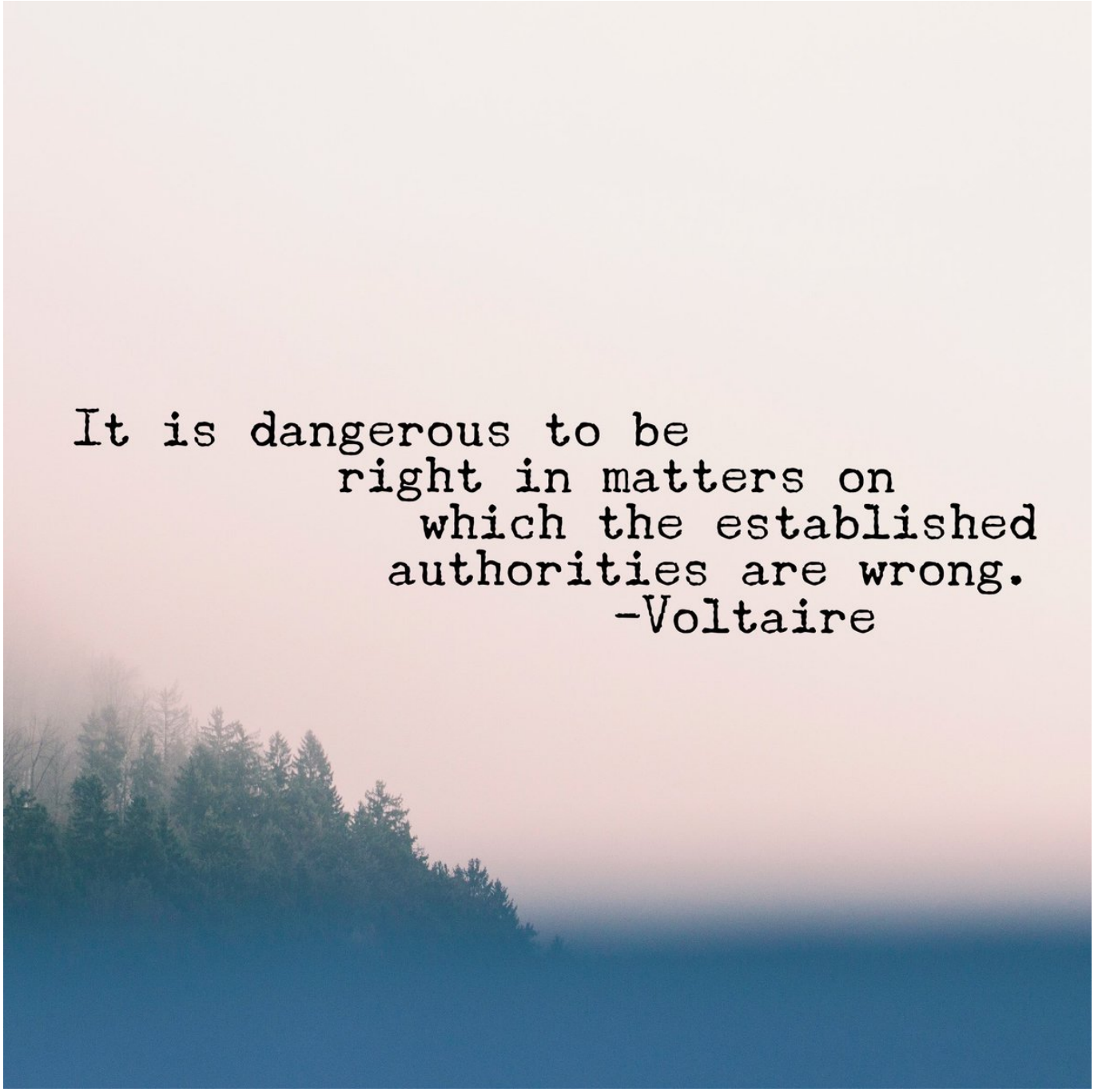
interaction of D shell electrons in these metals. Most metals in biology are transition metal atoms, and all have abundant D shell electrons. *Things that add metals to tissues, for any reason, might be a problem for a person with an elevated ubiquitination rate.* These electrons are drawn to non native electromagnetic energies. This increases the excitation of the electrons in the D shell and changes the redox potential of the metal. This can change its optico-photonic, electrochemical, and electromechanical actions within the proteins in cells. This alters their physiologic ability by changing their size, shape, charge, and/or polarization. **When these metals are incorporated into our proteins, they are marked for early replacement by ubiquitin because of these atomic alterations. Life recycles suboptimal atoms with the environment using redox chemistry. When the environment does not contain atoms of the correct energy state, ubiquitination rates remain chronically elevated.** This rapid turnover, pushes the Hayflick limit to its maximum, and shortens telomeres and leads to many diseases. Our modern world's environment is now loaded with excessive non native EMF's, which affects the atoms used in protein synthesis. We have new modern techniques and schedules for vaccination and food production, that evolution has never seen. This stresses the system and causes excessive protein turnover. The addition of metal adjuvants and catalysts may have unintended effects in a microwaved world. **Since modern science does not understand the atomic mechanism, they do not believe the effect is possible.**



When proteins are marked for early replacement, it resulting in much more precipitated metals in our tissues. Most neurodegenerative disease's are associated with excessive metal accumulation in the brain. HYPERLINK. The metal deposition has another adverse effect on the local organ clocks. It acts to speed up the organ clocks, using quantum electrodynamical laws. When they speed up, relative to the SCN, cell signaling is seriously degraded. The organ cloch should never be faster than the SCN. This is a signaling disaster for a cell. **OB/GYN's take advantage of this mechanism when they insert a copper IUD into a uterus.**

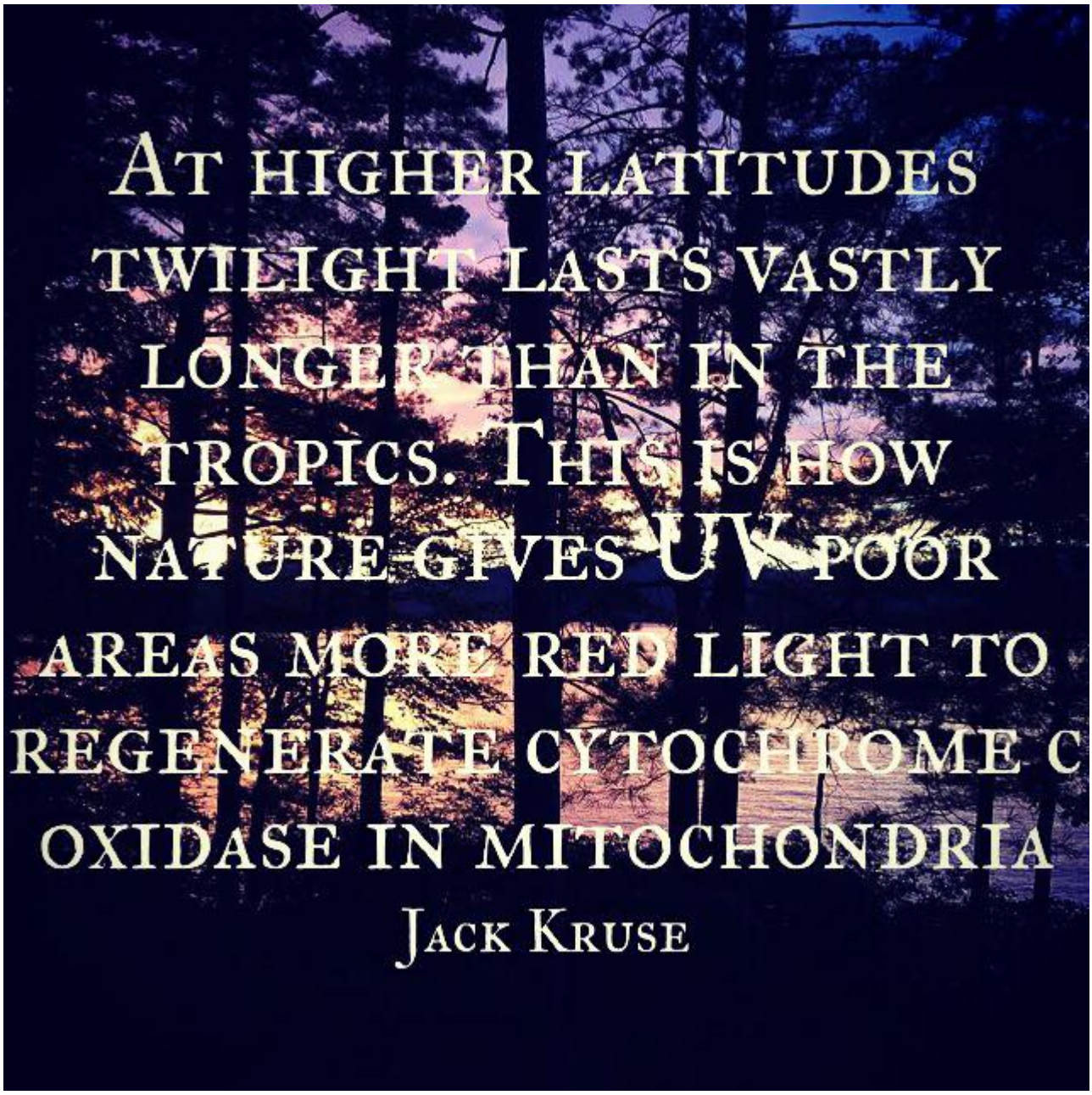
Ovulation is impossible when the uterus clock is running faster than the ovarian one. They have no idea why an IUD works, but now you do.

When you marry a microwaved environment, with the lack of DHA in cell membranes in the SCN, you create the perfect storm. **It leads to a complete uncoupling of ubquitination from melatonin cycles in the brain and gut.** Blue light frequency destroys DHA in the retina further slowing the SCN clock in relation to the organ clocks. DHA loss destroys the optical relationship between light bending in our gravitational field to uncouple light cycles from the cell cycle and metabolism. This is why blue light destroys DHA and melatonin levels in humans quickly. Diet is not going to fix this clock speed mismatch between the SCN and the organ clocks.



TRUTH BOMB: This process is light mediated and affected by gravity, therefore it is quantum mechanical disease based upon the use of light in the mechanism. Quantum mechanics allows everything to be possible, while nothing can be predictable, in this situation. This is how the action of quantum physics shows you the fallacy of evidenced based anything in medicine. This action underpins every disease biology studies today.

Not one RCT's done to date, controls for these effects of light.



Light is also affected by altitude because as we go higher, we face EMF's of higher energies which can affect like via altered magnetic field interactions. This is how the aurora form. This is why suicide rates are exploding in places like Utah. I covered that in Ubiquitination 1.

The combination of all these effects creates the perfect storm for rapid ubiquitination in tissues because they are all yoked

to light's relationship with the SCN and organ clocks in biology. Moreover, this situation ruins our cells ability to sense the native EMF's from the Earth and sun, by our cell membranes. *Cell membranes are not only capacitors but they function as antenna's built into our cells to pick up native signals from the Earth, sun, and moon.* This increase in tissue concentration of metals manifests as an increase of mass within our CSF. This alters the buoyancy of the brain because it affects the density of the brain. Anytime density in a tissue is affected so is optics because water is also changed.. This is why Aluminum is associated with many neurodegenerative diseases and why its exogenous use of adjuvants in vaccines and pesticides is a real quantum issue for a modern man.

TRUTH BOMB: This alteration of mass equivalence, destroys the normal antenna ability in the cell membranes of neurons in the neo-cortex for native EMF signals transmission. In essence, we lose light's effects to entrain our SCN and our magnetic sense in mitochondria. This will lower voltages in cells and tissues. This further leads to uncoupling yoked cycles because calcium is effluxed. In this circumstance, biochemistry becomes disconnected and decoherent. We effectively uncouple circadian biology from the cell cycle and metabolic cycle, resulting in various neolithic diseases. *In my opinion, this is the origin of all the diseases of modern man. The irony is that they have been created by our own hands.*

In addition, the evidence is mounting that the interaction of ubiquitin and melatonin in the activation of the transcription factor NF-κappa Beta. NF-κappa Beta is the 911 system of the cell that ties inflammatory cascades to circadian clock genes.

NF-κappa Beta modulates the global cellular levels of communication, by modulating numerous signal transducing factors such as the tumor suppressor, p53. **P53 is known as the regulator gene of the entire genome**. This links circadian

biology to genomic expression.

Clearly, if an organism doesn't survive its early stages, then genes that promote survival in later life are meaningless. Supply-side stability of stem cells is important in the later stages of life to increase lifespan. It is becoming clear that the guardian of the genome gene P53 executes this function. P53's main function seems to be inducing cell cycle arrest in somatic cells, the cells that currently make up our organs. They do not include stem cells or the cells of reproduction. If the cell cycle is arrested, that cell cannot go on to form cancer because it cannot divide. When circadian biology is uncoupled from the cell cycle, we lose control over the p53 gene. Loss of P53 control, can and does lead to chaos. Ironically, it also appears that P53 controls the stem cell supply of many organs as well. This is why aging and cancer are linked. Replenishing stem cells appears it is possible, once clock genes and ubiquitination recouple properly, based on what we now know. Ubiquitination "rates" links directly to clock genes. Each somatic gene has a circadian clock gene preceding it directing epigenetic expression.

BIOLOGY GEEKS: Some of the actions of melatonin on the regulatory particle of the proteasome appear to be related to its inhibition of the calcium-dependent calmodulin kinase II, an enzyme which reportedly co-purifies with proteasomes used in ubiquitination process. This link to light, magnetism, and water chemistry directly to cysteine/sulfur chemistry to the inflammatory cascade within the human brain. This is how the 3 legged stool directly links to leptin resistance, via NF kappa beta. **Modern neuroscience, has shown us melatonin is one of the few hormones released from the pineal gland with very sparse SCN outflow tracts.** This has surprised researcher, but makes complete sense from a quantum prospective. *Light frequency is modulated by tissue surfaces in humans.* This is where plasma meets the skin and enterocytes. The light frquency signal should be in blood

plasma, when you see things as I do. This explains why the pineal has no blood brain barrier and why it has a brisk blood flow. There is a neural outflow from the pineal, however, that does exist, for the most part it is indirect. In this way, your SCN, performs a lot like the atomic clocks that control GPS systems today. Why do I use this analogy? The physics of the speed of light, is the only reason for my belief, which was covered in detail, in ubiquitination 2.

When your melatonin levels are higher in the standing position, it is often a sign that you are suffering from some type of circadian light mismatch. Why? Blood flow to the pineal function are linked to the circulatory system that is energized by AM sunlight. In fact, it does not depend upon food. Disrupting your SCN causes a circadian arrhythmia and an inability to entrain to LIGHT, but not FOOD. Hyperlink

SURPRISE!!!

Melatonin levels are adjusted by blood pressure flows at night when we are supposed to be sleeping. When melatonin is elevated when we are awake, signaling has gone awry. **The pineal and SCN were designed by evolution to be at the same latitude in the human brain because of *the photoelectric effect of light.*** This relationship has nothing to do with food either. It is a characteristic of all non-mammalian vertebrates; that their pineal glands had direct photosensitivity and plasma connections. Humans, however, have lost the direct light connection, but they still have the brisk blood flow connection; and as such, their SCN's and pineal glands are on the same geographic latitude within their brain to maintain this blood flow relationship. **This relationship is linked and cemented by the photoelectric effect of sunlight and *sulfur chemistry in your skin. A pill***

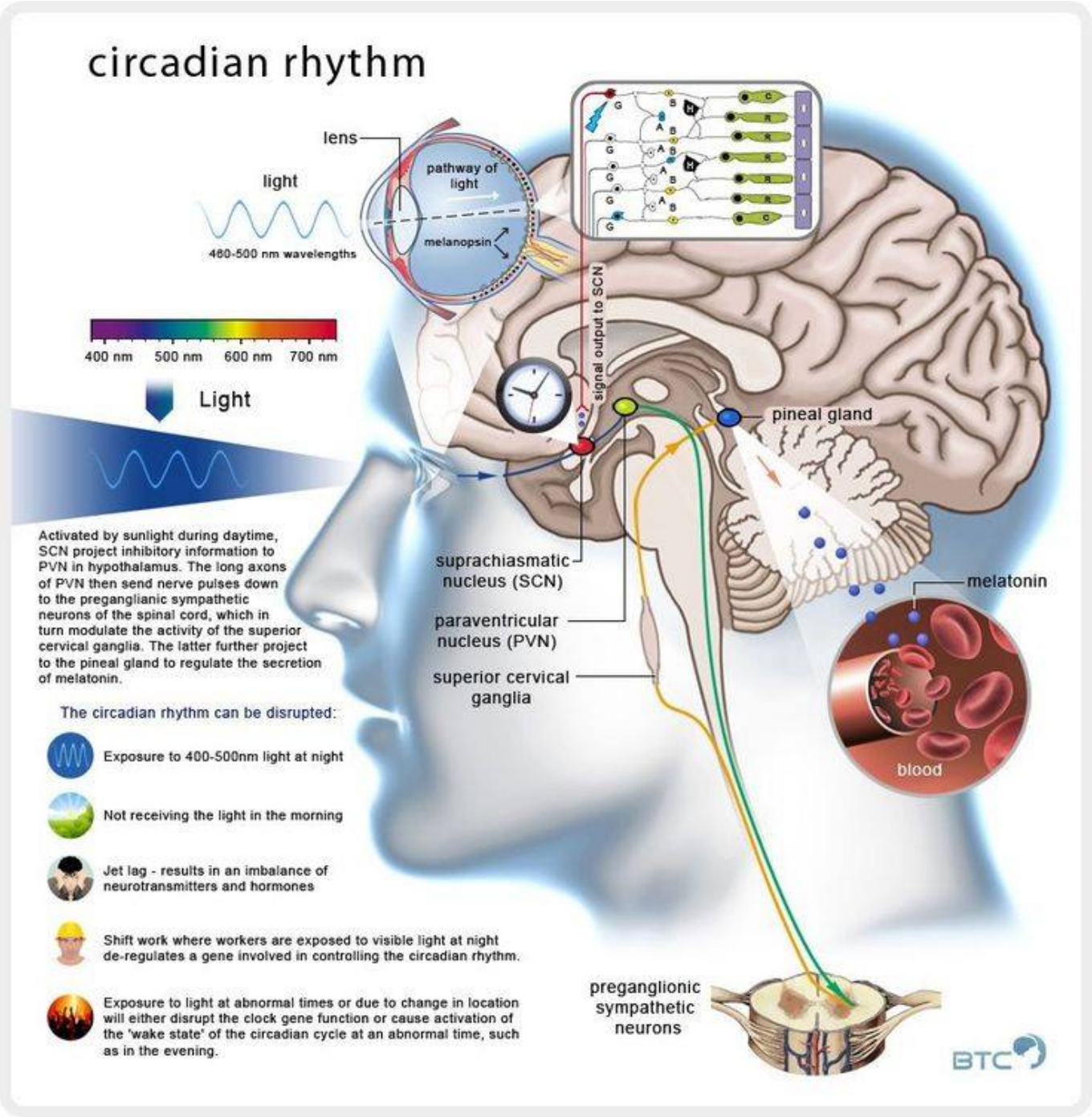
won't solve this ill. Hyperlink.

There has been an evolutionary trend leading to the progressive replacement of direct photosensitivity of the pineal gland by indirect photosensitivity. Anyone who studies evolutionary biology should have recognized this. Few have. This is especially characteristic of eutherian mammals. Humans are the most complex eutherian mammal. This has led to dramatic changes in the structure and function of the pineal gland in the eukaryotic kingdom, especially humans. In humans, the pineal gland develops from the roof of the embryonic forebrain and in adult brain. The pineal gland of non-mammalian vertebrates is primarily composed of pinealocytes, which are structurally analogous to retinal cones of the eye of lower order neurons and interstitial glial cells. The organization of the pineal gland, in these less complex animals, resembles the less complex vertebrate retina, and is indicative of its role as a luminance detector for light. In evolutionary terms, the pineal was an 'old retina' which paid deep attention to light.

NEUROSURGERY GEEKS: The modern human pineal gland contains no direct CNS connections, however, its rich vascular supply carries sympathetic fibers on branches of the arterial tree from the superior cervical ganglia (SCG). The superior cervical ganglion is part of the autonomic nervous system responsible for maintaining homeostasis of the body. The SCG is the only ganglion in the sympathetic nervous system that innervates the head and neck. It is extremely important for activation of the mammalian dive reflex. ***It links modern man to his watery past.*** The pathway of SCG innervation is shown through stimulation of the cervical sympathetic nerve, which invokes action potentials in both the external and internal carotid nerves. They directly tie *to blood pressure control in the carotid body*. The postganglionic axons of the SCG innervate the internal carotid artery and form the internal

carotid plexus. The internal carotid plexus carries the postganglionic axons of the SCG to the eye, lacrimal gland, mucous membranes of the mouth, nose, and pharynx, and numerous blood-vessels in the head. The postganglionic axons of the SCG innervate the eye and lacrimal gland and cause vasoconstriction of the iris and sclera, and pupillary dilation with respect ***to light.*** The postganglionic axons of the SCG innervate the pineal gland and are involved in circadian rhythm. This connection regulates production of the hormone melatonin.

The postganglionic axons of the SCG also innervate blood vessels in the skin and cause the vessels to constrict to limit the amount of electrons and photons the skin can pass into the blood plasma during AM sunlight. This is how light, plasma, blood pressure, and circadian biology are yoked, fundamentally.



<u>THE LINK OF SUNLIGHT TO BLOOD PRESSURE AND HEART FAILURE</u>

These pathways are tied to plasma blood pressure control. ***This is why blood pressure is among the best clinical signs of altered ubiquitination rates in my opinion.*** The connection of the SCG links the pineal gland to a pressure sensing electromechanical coupling. The pressure wave is found in the arteries of the head and neck. *Therefore, higher blood pressures in the brainstem usually manifest, from a lack of*

daytime sunlight or dehydration within the blood plasma for some reason. There are many studies linking sun exposure to lowering human BP. Modern life keeps humans indoor out of the sun. This blocks sulfation of vitamin D3, cholesterol, melatonin and DHEA. This is where heart disease begins.

The paraventricular nucleus (PVN) is the sympathetic outflow of the brainstem and is correlated with catecholamine release and higher blood pressures. The PVN also modulates the frequency of light released in the white matter tracts of the brainstem circuits. The more abundant higher frequency light that is released from the PVN, the faster your heart will beat, below your brainstem. This is only true if the SCN is faster than the organ clocks in cardiac cells. When the relationship is not correct, cardiac arrhythmia's are the result. In modern cardiology, this is the most common diagnosis made today. More irony? They put people on blood thinners. Why, bad rhythm leads to blood pooling, stasis, and clotting. What does sun exposure do? Increases the zeta potential to repel RBC's from one another. DHA fills RBC cell membranes. Sunlight also augments flow because water in plasma is charge separated by sunlight to create massive exclusion zones to increase flow with no energy input. The sun alone does this. Gerald Pollack did the experiment already! Modern medicine has no idea the mechanism is published!!!!

This means rhythm dysfunction is also a clinical symptom of a ubiquitination impairment. This effect becomes compounded by gravitational and magnetic effects on light, mentioned above and in ubiquitination 2 and 3. **The ultimate result will be that the heart ages faster and fails more quickly.** Moreover, your blood pressure will be higher, as the heart fails. Alteration in optical physics perfectly describes what we observe in biology if we examine it. This is why heart disease is the number one killer of humans on a global basis. Notice how dietary templates, have never come into this

equation.

THE PHYSICS OF HEART DISEASE

Einstein's relativity shows us, that if light is dropped to the Earth from the sun, light must gain energy. The only way light can gain energy in the universe naturally is by increasing the frequency of its wavelength. This is why blue light increases our awareness during wakefulness, and why it destroys melatonin at night. This is bad news for ancestral groups who make their money on a dietary template from people. ***They should be selling things to mitigate artificial light, get people off social media, and stop selling apps on I-phones for bio-hacks.*** Advocating for a diet or lifestyle that ignores all these things. Moreover, in my opinion is a huge mistake, as bad as modern medicine's gaff in selling people a low fat carb diet and statins for heart disease prevention. Why am I so interested in refining their message to the world? Because their current iteration of their template advocates enhancement of two behaviors that are quite destructive to ubiquitination rates. *The more protein you eat, the less exercise you should consider*, based upon the linkage between ubiquitination rates and the light physics of melatonin sulfation.

When you advocate a high protein, meat laced diet, with an excessive exercise you are potentially speeding up heart disease, while un-knowlingly creating massive amounts of adrenal fatigue because of how light interacts with nitrogen in your gut and in cytochrome 1 of your mitochondria.

THE BLUE LIGHT YOU ALLOW INTO YOUR SKIN AND YOUR RETINA

The physics of blue light on the SCN is more critical to understand with respect to aging inside your body. Paleo focuses in on good looking facades. This is why they advocate clean eating and heavy doses of exercise. They fail to include the modern environment humans have added to nature's mix since 1950. They dont realize what blue light and a high

protein diet can lead too, in this environment. Too much of blue fake light, causes space-time around you to contract and shrink, and as a result, you age must faster and deplete your stem cells. I warned them this several years ago at paleo Fx and they scoffed, because $$$ was to be made. I warned them in Austin during my talk, that "**a certain rhythm**" was gonna get them, but, instead a group of their leaders, advocated ad hominem attacks against my warnings. Hard core science will always beat a marketing game, in the end. I took an oath 25 years ago to do no harm and it means something deep to me. I don't care if they like me or my ideas, but I do care about getting the science correct, so patients no longer get bad info from my profession or any marketing scheme.
This is why circadian mismatches disconnect light entrained circadian cycles from the cell cycle, by uncoupling and disconnecting ubiquination from melatonin. In this way, the PVN can be thought of as a *frequency modulator for light*, from the SCN. *Light really is nature's key drug. Her medicine chest is filled with many frequencies, and each one can be its own medicine.* This is how optogenetics work in the human brain. This is a new science in neurosurgery, I mentioned four years ago. It began in 2007. There is massive amounts of data, already well published in the literature, that these ideas are scientifically sound, and truly ancestral for our species. Check out Dr. Luis De LeCea work in this area.

The current status for the public, is that modern healthcare, does not appreciate how altered melatonin cycles uncouples ubiquination from the cell cycle to cause disease. Taking exogenous melatonin, in this case, a go to maneuver by many functional medical professionals, will worsen the situation because of the optical physics involved. I have discussed this above. Any time you take some exogenously, that is designed to be part of a coupled system, ruins the built in feedback control. Taking melatonin is a dangerous game, when you understand ubquination. This is why I avoid it in the Jet lag Rx. There are many functional paleo practitioner's

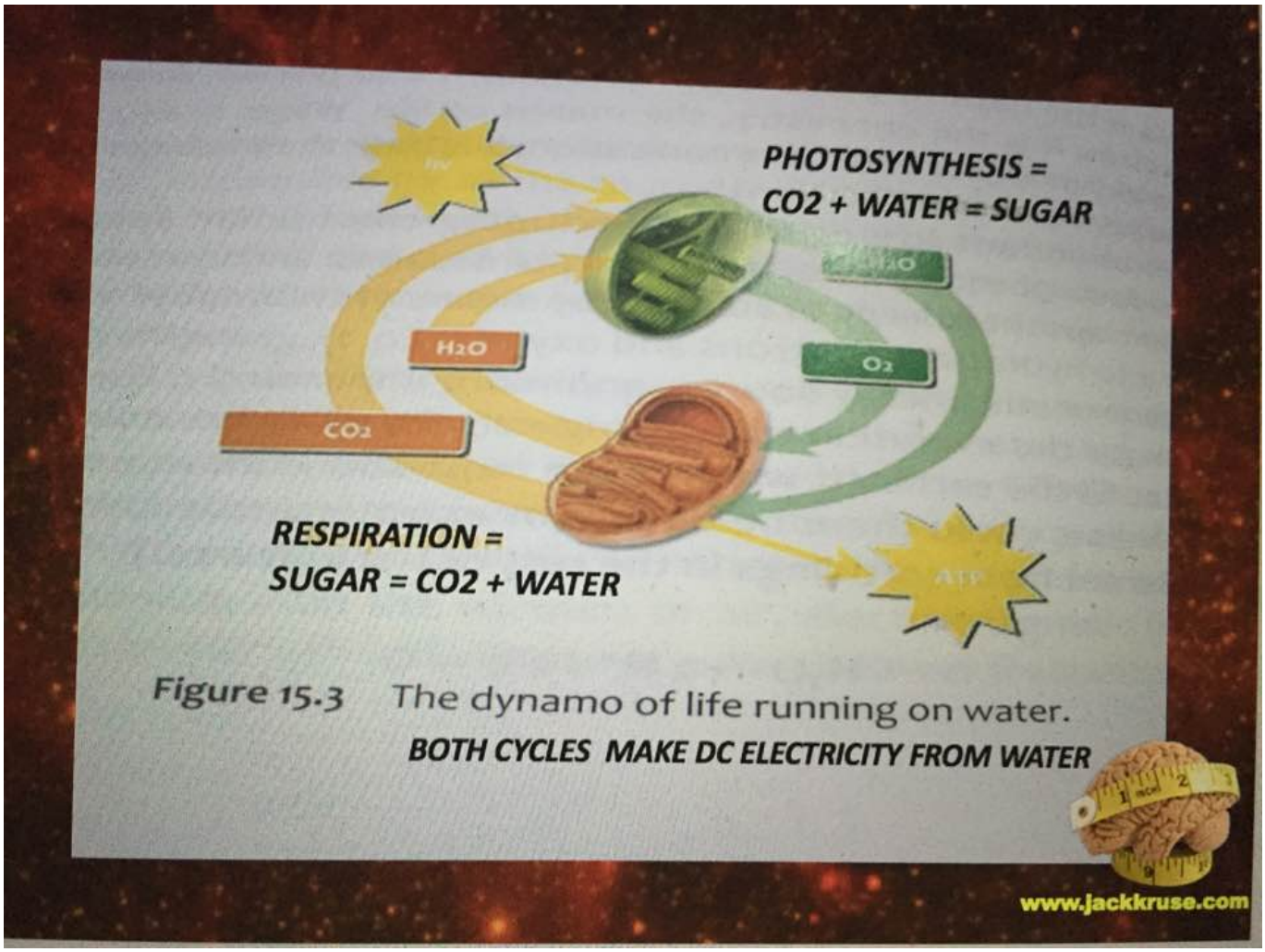
advocating this move, and you need to be aware of the downside of this information. These mechanism built in to all of our cells, and it goes back 4.5 billion years when bacteria and Archea dominated the oceans. This should be very paleo, because it is primordial to all life, sadly it is not.

SUMMARY: LIGHT OR FOOD?

For evolution to work optimally, a cell first must adapt to its environment. The first situation any living cell would be subjected to in an earth day is a period of day and night. Over time it would also be subject to the seasons in our environment because of the earth's revolution, tilt, and angulations of the sun. The environment motions of light, water, and gravity was coupled to PER 1 and PER 2 genes and Bmal1. As time continued on, further life would have been subjected to solar variations and would have had to account for it. When it was night time, the interior of cells became more reduced chemically and electrically. NADPH (nitrogen) would have to be replenished within the cell while the DC current within the cell at daytime would have to diminish during night time. This would result in a good redox potential within the cell to drive life forward. During night there was absence of light, resulting in a different redox state compared to the oxidation of the sun's light. When light was absent, cells would be optimized by developing recycling programs, for their components using autophagy during sleep. During the day while energy is being expended to explore the environment, the cell would become more oxidized because it was losing electrons and energy to its environment. This loss of energy could be harnessed by mitochondria to signal. The loss of energy resulted in a superoxide burst. If it was sustained H_2O_2 was made. Two enzymes were innovated to control this process in mitochondria to signal autophagy and apoptosis. If energy loss was exceeded the hydroxyl free radical was made. There is no enzyme to scavenge this free radical. Only molecular hydrogen

gas can do his job. The microbiome makes 8-12 liters of H_2 normally when it is healthy. If more hydroxyl free radical is made, then the system can't buffer itself, disease generation and eventual aging is the result within that tissue.

Cells would have to find a way to make energy before food was even evolved to survive, so it used water as its battery. Water is a natural repository for electromagnetic radiation, and as such naturally absorbs light. Water becomes an ideal battery with infrared light. Our skin and plasma became a solar battery for both UVB and IR light. In this way, life began to control its own cellular division when it harnessed solar energy. Life began to use sulfur in our skin to break light down into the frequencies it needed for the systems it evolved. This "harness" remains in us today in our blood plasma and pineal connection. The epic battle for the cell over evolutionary timescales, was to cooridinate regular circadian cycles of light and dark found in the primordial environment of Earth and "yoke" those signals to its growth cycle. Much later life evolved the ability to yoke the growth cycle to the metabolic cycle. Metabolism was not needed in the beginning, because photosynthesis required just water and sunlight to fix carbon. This is why food never trumps circadian signaling in life. This is why photosynthesis evolved before oxidative phosphylation in mitochondria.



With time, food evolved, when it became necessary. This is when the cell cycle and metabolism linked. Food became important when animals evolved because, unlike plants, they are not 100% connected to Earth by roots and the sun by their canopy. When you live disconnected life, as all animals do, you must develop a plan for energy generation away from Earth's magnetic field and the sun's power. It became a condition of existence that lady evolution would need to augment life's metabolic cycles with electrons from food. They would have to become to growth cycles. This is when food became important, and then animals evolved who required food. Cyanobacteria and Archea used primitive photosynthesis to generate energy, and later on plants on the seabed in the photic zone and then evolved on land. Every cycle on this planet is tied to photosynthesis which makes food from light and water. It is beyond me, how anyone could guess food trumps light or water for epigenetic control given the facts

nature has given science. Plants, also do not require food, they make it out of thin air and sunlight, and yet they are alive. **Light has always been a primordial energy source in relative nature to food.**

In all of the major model organisms in which circadian rhythms have been studied there has emerged a central organizing principle of the molecular clockwork: within cells a set of clock genes and their protein products together participate in autoregulatory coupled feedback loops of transcription and translation to produce an oscillation with a period of about 24 hr. This links light to protein degradation and nucleic acids are what make protein in us. This is why light activates ubiquitination rates and ubiquination couples to epigenetic expression. This is the focus of the next blog. It also points out why food is not the player we all thought.

Most people know that the suprachiasmatic nucleus (SCN) in the brain is where the circadian pacemaker lies in humans. It monitors this dance between darkness and light, and the seasonal cold and hot temperatures in our environment to help control and monitor our own growth and development. Evolution apparently agreed to use these signals in all living things because this is what it uses for all life on earth today. Optogenetic and optical photonics opens another trap door for medicine and ancestral health to be aware of. Polarized light has massive effects on protein thermodynamics. This has also been proven in prion diseases, and Stanley Prusiner’s got a Noble Prize for it. Gary Taubes *made fun* of Dr. Prusiner’s work. He continues to make errors in his own assault of carbohydrates. Gary Taubes believes what Jimmy Moore sell’s. You need to be wary of their advice too. Later, in the series you will see why.

This means circadian mismatches can alter the polarization of light in our tissues, which result in altered cellular signals. The proof that this process is going on in us, is easy to resolve because we now can see size, shape, and

location changes of proteins, organelles, and nucleic acids that are suspended within the water of our cells with electron microscopes. This is no longer a best guess theory, no matter the marketing paradigm that you ascribe too. This can be done with tissue samples or with MRI's. I do them with both.

We attract what we are prepared to receive. People in medicine and ancestral health care more about beliefs than reality or truth because they create their own versions of reality they use in their businesses. Everyone needs to become aware of the biologic cost of bad thinking. Every single eutherian mammalian gene, has a clock gene in front of their somatic genes. Ask yourself why that relationship exists? Is it food or light that control your biology? Circadian rhythms are controlled by "clock genes" that are entrained by light. These are facts, not my opinion. **Be careful who's beliefs control your dietary template. Caveat Emptor. Think for yourself.**

TOP TEN SIGNS OF UNCOUPLING OF MELATONIN/sulfated D3 FROM UBIQUITINATION

1. You have cataracts, glaucoma, or macular degeneration, tinnitus, early onset neuro-degeneration. Your CT shows a calcified pineal. Cataracts are a protective mechanism the brain uses to reduce blue light exposure. If you also ***procaffeinate,*** you really need to bio-hack your environment because you are likely blue light toxic.

2. As a child/infant you developed eczema or peanut allergy, need tubes in your ears, excessive caries, or need glasses early, childhood asthma, reactive airway disease, early puberty, have a neuro-immune disease, eating disorder
3. When you changed to a paleo diet you developed rapid onset constipation or an autoimmune disease within a year
4. You have arrhythmia, hypertension, sleep apnea or pseudotumor cerebri or normal pressure hydrocephalus, or CPM, hx of rhabdomyolysis, alcohol destroys your sleep, have an abnormal T2 MRI of an organ.

5. You develop an autoimmune condition with dairy or eggs exposure, especially associated with xerostomia or xerophthalmia, leaky gut. MS, Devic syndrome, RA, LADA, Hashimoto's, fibrocystic disease or thyroid nodularity
6. You have been diagnosed with adrenal fatigue. AF develops with a meat diet and excessive exercise
7. Chronic post nasal drip, chronic sinusitis, metallic taste in your mouth, you get fibromylagia, photosensitivity, sense coldness in sunlight
8. Food allergy testing shows you have excessive amounts of allergies, yet you at those things with no problem.
9. You suffer from SIBO, IBS, Crohn's, eosinophilic folliculitis, esophagitis, GERD, acid reflux, seafood allergy, and use chronic nootropics, you get migraines while inside windows or in a car.
10. You have chronic parasite infections, mycotoxin exposure, CE, FM, CMV, EBV, or Lyme disease that never seem to go away regardless of what is done for them. You get "mysterious diseases" after jet flights over 3 hours in length.

TRUTH BOMB: Sir Henry Dale, one-time President of the Royal Society of London, made an important comment in his retirement speech: "Science should not tolerate any lapse of precision, or neglect any anomaly, but give Nature's answers to the world humbly and with courage." To do so may not place one in the mainstream of modern science, but at least we will be searching for truth and moving ahead rather than maintaining the scientific status quo.

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