TENSEGRITY #9: ELECTRON SPIN MEETS MITOCHONDRIAL FXN

READERS SUMMARY:

1. HOW DO MITOCHONDRIA USE ELECTRON SPIN TO SIGNAL?
2. IS SLEEP A PROCESS WHERE ELECTRONS AND PROTONS ARE MADE QUANTUM COHERENT?

3. HOW DO IRON AND SULFUR ATOMS PLAY A KEY ROLE IN THIS DANCE?

4. WHY IS INFRARED LIGHT ALONE, CRITICALLY IMPORTANT IN ENTANGLEMENT OF FREE RADICALS?

5. WATER EXPANDS WHEN IT IS COOLED, FEWER PEOPLE KNOW WATER CONDENSES WHEN IR LIGHT HEATS IT.

I said in Tensegrity 5 blog post that my ten years of biohack taught me I had a lot to learn about mitochondrial function. Today's blog gets into some of those details I have not shared yet. The story begins with solid state electronics. It turns out that mitochondria have a lot in common with electronic devices that use electric and magnetic fields to generate energy. In essence, mitochondria are '*quantized heat pumps'* that drive life's energy needs. ATP is a bit player in this story. It works to slightly uncondense protein polymers so water can bind around their molecular substructure to power it with quantum information and energy.

Let us examine how this process occurs. All food is broken down into electrons that enter electron chain transport. At each cytochrome protons are pushed out of their cytochrome channels. The fourth cytochrome is called the cytochrome c oxidase that catalyses the last stage in the oxidation of foodstuffs in the membrane of the mitochondria, in which oxygen is reduced to water by combining with protons and

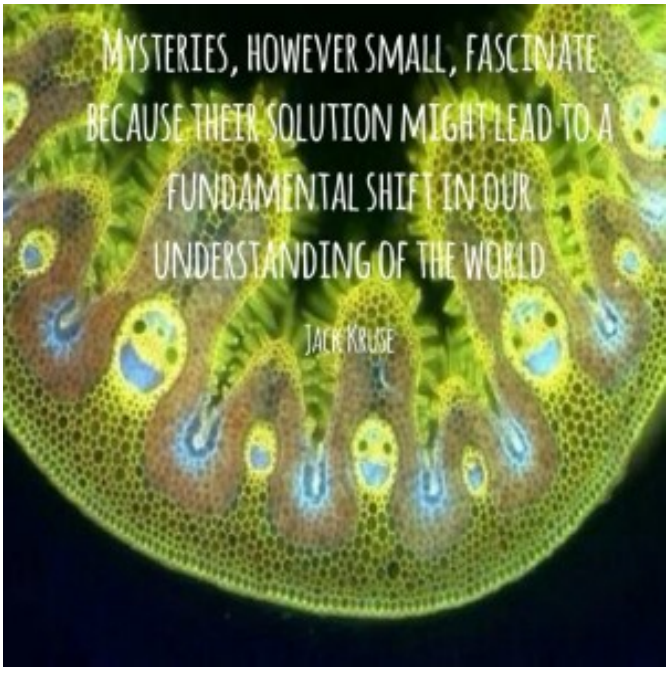
electrons. The irony is the cytochrome c oxidase, pumps more than 10^3 protons per second. This is a much higher rate at which protons can be supplied to the proton conducting channels of the cytochromes via the bulk diffusion rate that biochemistry believes drives this pump. They are delivered by proton tunneling.

ATP is generated normally during awake hours. During sleep initiation ATP levels rise but then fall tremendously when we enter REM sleep when our muscles are paralyzed. This drop must occur because in sleep we have to develop a special quantum state for the brain to recycle itself. A future blog in this series on cell membrane physiology will explain it in detail. Right now, it is important for you to realize that the initial surge in ATP is from free fatty acid release to increase electron flow during uncoupling that happens naturally in the first few stages of sleep. ATP is not made well in the deeper levels of sleep stages. During uncoupling, free heat in the form of infrared light is released by mitochondria as FFA's are being used as the currency of electrons input. During this time no ATP can be made. The infrared heat loss occurs to the surrounding water *and the water than condenses as this heat is added*. This natural ability of water has some unique thermodynamic effects that couple it to several quantum processes that make the mitochondria act like a *solid state quantum heat pump*.

Today, all electronic devices use transistors to work. Today we have smaller newer versions that use both electric and magnetic forces to do the things they do. They are found in computers, TV's and your cell phone. In these modern devices, the magnetically sensitive transistor is also known as the *spin transistor or spintronic transistor*. This was named for spintronics, which is a technology which this development spawned in 1990. Spintronics emerged from discoveries in the 1980's concerning spin-dependent electron transport phenomena in solid-state devices. Every electron in every atom has four

quantum numbers that organizes the periodic table of elements. Spin number is one of those numbers.

The spins of electrons are not only manipulated by magnetic fields, but also by electrical fields. Both exist in mitochondria and both are powerful. They can be used to collect and store information from electrons or the photons they carry. Mitochondria are masters at controlling the spin of electrons to do the amazing things life can do. Few people understand why this is true because they do not understand quantum spin or radical chemistry.
Most of the time in an atom electrons are paired. One spins up an the other spins down. This is called their singlet state. When electrons are in their singlet state in atoms their electron spins are paired and they cancel each other out. This is how the Pauli exclusion principle works. This fundamental quantum rule dictates how the periodic table is set up by stating that two electrons can not exist in the same quantum state. But what happens when you create chemicals called free radicals that have electrons that spin in the same direction? All mitochondria create free radicals. ***Free radicals have unusual spin characteristics.***



Blade of grass performing

photosynthesis

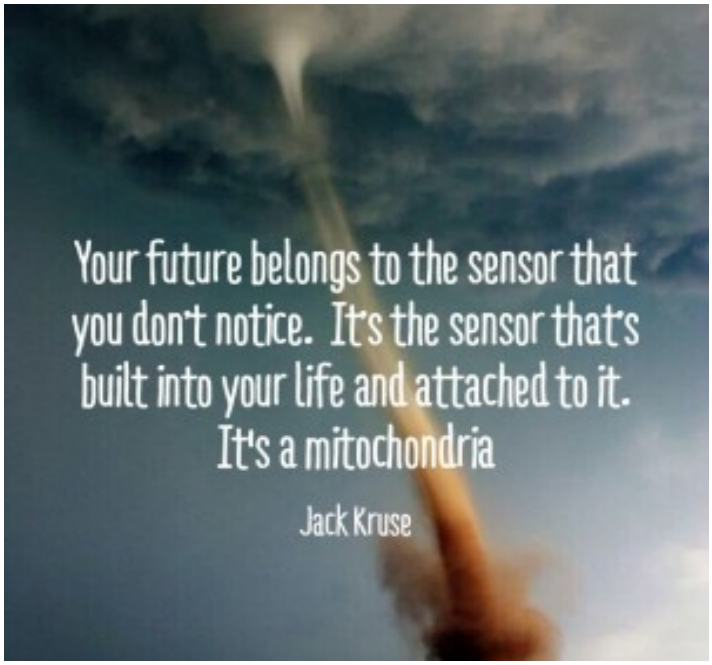
So the question you should have now is what happens when these two same spinning electrons are excited by electric fields or magnetic fields?

This becomes the incredibly important issue in chloroplasts and mitochondria. All life on this planet uses one or the other to make energy from the sun using electrons and protons. It is why all cytochromes use Iron- sulfur (Fe-S) redox complexes where quantum mechanisms dominate. The mitochondrial complexes are like electromagnetic compasses, that tell the mitochondria what the environment is calling for. In this sense, they are ***quantum heat pumps*** because they all generate some amount of **infrared light**. The free radical chemical signal determines how much light or energy can and should be released to the MINOS water layer around the mitochondria to drive signaling and physiologic functioning. Water normally has a high dielectric point. The dielectric constant measures how effectively water can shield the negative and positive charges from one another and hence reduces the force between them. This is why water fundamentally breaks symmetry in nature because it is very effective in separating charges and forces. I would remind you that heat shrinks water when it interacts with heat (infrared light).

In this way, when you study the water molecules subsequent motions you can deduce something about the particles that hit water as they exit the cytochromes. Water is how a cell deciphers environmental signals. Water is not a homogenous fluid. It acts like an ionic plasma that can imprint information and energies of things that interact with it. This is how a mitochondria works at its smallest scale. Evolution happens by natural genetic engineering of light and water not by random mutation and natural selection.

The hydrogen bonding network in water is a quantum measuring device because its motions and action provides a record or a

memory of the state of entangled pair of electrons in free radicals made in mitochondria. This is why mitochondria use free radicals to signal. They also release *monochromatic infrared light* because you can only **entangle electrons** and protons with light at **one specific frequency**. The double slit experiment proving quantum entanglement only works if light is monochromatic. This is why your skin has to begin the filtering process of sunlight a long time before your mitochondria can process the electromagnetic wave of light. You should be reminded that water absorbs electromagnetic radiation best at 270 nm directly in the ultaviolet range. Everything is coupled by quantum design when you understand her plan.



When free radicals are formed at the cytochromes with "like spinning electrons" become entangled by light or magnetic fields these particles can hit water molecules by themselves or as a pair, the subsequent atomic motions in water will be affected by the state of the particle that hits water. These two electrons will also act in unison instantaneously no matter the distance put between them. Entangled particles brought together have their spins balanced but when one spins counterclockwise, the other instantaneously spins clockwise. **Mitochondria use magnetic memory *to generate these entangled particles.*** If you think this is absurd, consider that all magnetic drives in technology today use spintronics today to magnetically store data on hard drives in electronics as well.

Magnetic devices like hard drives, magnetic random access

memories (MRAMs), molecular magnets, and quantum computers all depend on the manipulation of magnetic properties. In an atom, magnetism arises from the spin and orbital momentum of its electrons. ‘Magnetic anisotropy’ describes how an atom’s magnetic properties depend on the orientation of the electrons’ orbits relative to the structure of a material. It also provides directionality and stability to magnetization.

Mitochondria use free radicals to code information and energy thermodynamically using the same quantum effects. Mitochondrial cytochrome protein clusters ‘shoots’ the radicals into water and oxygen to send to all parts of cell increasing its coherence as time develops. This process is most effective when we sleep. Sleep is when biology becomes coherent. During wakefulness life can not entangle electrons and protons. The coherence of water is maintained by using its density and its icosahedron molecular form. This is discuss in Martin Chaplin’s research I have mention before in the quantum biology series. *Liquid water is not a bit player in the theatre of life, it’s the headline act for mitochondria.* The shape of the water molecule clusters in cell water determines is molecular density and its ability to be coherent for energy transfers. Size and shape of things determine its thermodynamic profiles. Thermodynamics relies on quantum mechanisms and are united in Einstein’s mass equivalence equation. All matter is fundamentally energy according to this equation. The size and shape of these molecular water networks are directly tied to the temperature that water finds itself in due to the heat released to it by the mitochondria.

Why do cells organize in this fashion?

Efficiency of maintenance of metastability is the short answer. The science of how heat interacts with matter is called thermodynamics and this science can be boiled down to 4

laws. Most people talk about the main three laws, but the fourth one shows us how energy flows in the universe by a microscopic reversible process. The Onsager reciprocity relation, shows how symmetrical coupling of processes can arise naturally in a system under energy flow that moves from an areas with a lot of energy to one with a small amount of energy. The area around a mitochondria and cell membranes is loaded with energy like a capacitor would work. A battery holds a ton of charge. In nature, Lars Onsager showed that energy moves from high potential to lower potential naturally. He is often given credit for this unofficial 4th law of thermodynamics. All these laws of thermodynamics are subject to one main law of how energy relates to matter in the universe. That law is mass equivalence, or $E=mc^2$. All things in biology, *boil down to size and shape, not genetics as the current paradigm professes.* This is why size is what is the signal change for mitochondrial autophagy and apoptosis programs.

Free radicals code for energy and information release from mitochondria to alter size and shape of all things within a cell. The smaller or more compact something is the less energy it needs to become un-condensed or open. The more open something is the more energy is needed to condense it. The irony of these natural laws……is when an animal evolves in an environment that is energy poor for any reason the animal will become larger…..to become more energy efficient. This is similar to the 'economy of scale' idea in business mergers. In biology, it is has another name, called Kleiber's law. This is why elephants are huge and why mice are small and mice have faster metabolic rates. Their metabolic rates reflect these difference in thermodynamics, and this change is tied to how cytochromes in their mitochondria also have different magnetic and electric *oscillating forces* to make free radicals to work at controlling how they handle electrons and photons from foods they eat.

Spintronics is an emerging technology exploiting both the intrinsic spin of the electron and its associated magnetic moment, in addition to its fundamental electronic charge, in solid-state devices. Solid-state electronics are those circuits or devices built entirely from solid materials and in which the electrons, or other charge carriers, are confined entirely within the solid material. In a solid-state component, the current is confined to solid elements and compounds engineered specifically to switch and amplify it. Current flow can be understood in two forms: as negatively charged electrons (*the DC current*) and as positively charged electron deficiencies called holes. They get a more positive charge because the electron is no longer where it was previously, leaving a more positively charged environment behind.

DHA has a lot of these holes in it because of the alternating double bonds in its molecular structure. This molecular arrangement “draws” electrons to it with incredible force. This is essentially how the redox potential works as electrons move from place to place in proteins. This is why DHA has specifically selected for other proteins to work with in the lipid rafts of cell membranes. If you look at the construction or human cell membranes you will see massive differences within the eukaryotic kingdom. These changes are actually tied to why humans lost their hair compared to the their primate ancestors. The skin in humans is fundamentally a solar panel back up system to run your brain in quantum fashion. This is also the reason the glands in your skin are designed to sweat a lot to cool the surface temperature to allow for better conduction of electrons from your cell membranes to your blood plasma below the skin surface. Sulfur helps dissipate the many frequencies in sunlight over a larger surface area in our plasma to make it even cooler. It also helps select out the frequencies in sunlight that life like best to maintain metastability between the thermodynamic and quantum edges in our body. The cooler things become on the surface and below

our skin, the more energy efficient the system becomes because magnets in your mitochondria control the release of IR light that causes liquid water to shrink in size. Water condenses when it is heated. When it freezes, it expands. People have forgotten how this little aspect of water chemistry is the foundation of how the Cold Thermogenesis protocol really works. The flow of infrared energy in carried in electrons, photons, and protons in mitochondria.

Remember semiconductive currents work faster in cooler environments. Temperature has a massive effect on de-coherence in a system. Consider what happens to humans in the Arctic circle environments. Uncoupling respiration within their mitochondria generates heat in the form of infrared light from mitochondria to condense mitochondria and proteins. Might there be a positive advantage to running your mitochondrial metabolism chronically uncoupled in this environment? The answers is yes, there is in a very cold environment. In this environment, we would expect to see elevated free fatty acids in the plasma of these people. We also may expect to see some unique epigenetic modifications. Naturally, we do see this in CPT-1a mutations. Free fatty acids and good mitochondria are requisites and essential to uncoupling and heat generation to shrink cell water. This is why ice floats on top of liquid water at the poles and everywhere on Earth. This also points out why those advocating a low carb high fat diet who have bad mitochondria might be dispensing bad public information. There is a deep down side to these dietary templates and that is the lesson I am trying to teach you here today. Context is critical when you understand how a mitochondria works. Life is designed to exist when its protein polymers are SLIGHTLY un-condensed during daylight. Control of that ability is what epigenomic controls are all built around. Life can exist in its condensed form for a long time, but it can not entangle electrons or protons in this state. With time this causes a selection bias for mitochondria that cannot function well because they can’t recycle using autophagy. This is why trees

lose their leaves in autumn and shrivel up and condense their wood in winter. There is no proper way to unfold their proteins to take advantage of the light's ability to create life with the help of water and magnetism. This process can be seen in many of the "famous low carb paleo spokespeople".

WATER CHEMISTRY 101

Temperature also destroys the high dielectric constant of water. Cold increases the dielectric constant of water. When the dielectric constant of water rises inside cell water, cell water can condense or shrink even more when it is heated with IR light. This linkage makes a lot of evolutionary sense in polar environments. The linkage however extends all the way to the equatorial environments. This is why sweating is a critical component to understanding how mitochondria work as well. When we sweat due to excessive heat or exercising we are condensing water to limit mass to become thermally efficient. The movement of these subatomic particles within the proteins of the mitochondria are what allows proteins to become maximally elastic semiconductors that can adapt to many environmental stressor that life throws at living organisms.

Cell membranes connect to the outer mitochondrial membrane by actin filaments that have integrins connected to them. Integrins are designs to tighten or loosen the system to alter size and shape of everything in a cell. What controls the tensegrity system is the redox potential in the cell. The generation of free radicals is a synonym for the redox potential energy within the cell. If you cannot make them, you can not have ideal health or cellular signaling. This is tied to the amount of electrons and protons in the system that can work at large distances apart in different chemicals like oxygen, nitric oxide, and hydrogen sulfide. *Biology would have us believe each biologic process is structured and orderly on its surface, but the truth is they are all driven by random molecular motions tied to the redox potential that is controlled by the electromagnetic force of the environment of*

the cell.

TODAY'S BIOPHYSICS LESSON

Quantum biology is interested in how electrons are transferred in biochemical reactions using free radicals as their intermediaries. These are the mitochondrial signaling molecules that have lone electrons in their outermost electron shell. What makes free radicals different than other chemicals is that they have their outermost electrons paired up in atomic orbitals. This is a critical point because when you consider the queer quantum property of electron spin. Paired electrons cancel each other's spins out to zero in quantum math, because paired electrons spin in opposite directions. Free radicals do not have a paired twin to spin cancel them out. All free radical chemical have lone electrons in their outer shells giving them a quantum spin other than zero. When this happens it gives all free radicals a net spin that gives them a unique magnetic footprint. It also means that free radicals can be aligned within a magnetic field. It should be clear to you now why mitochondria use free radicals to signal. It also should be clear why free radicals should not have a negative connotation, as they do today in biology and alternative health. When you begin to see that mitochondria by themselves are small nano electromagnets, it makes sense that they would use free radicals to signal environmental signals to and from the cell membranes to other organelles within the cell using water's hydrogen bonding networks.

Long ago, in 1976, Klaus Schulten showed science how pairs of free radicals could be entangled biologically in European robins to be used for magneto-navigation. It uses a process called the fast triplet reaction. These reactions generate un-paired electrons on purpose. This would allow a magnetic field to use its flux forces to entangle the particles together. Quantum entanglement is the most queer property we will ever discuss on the blog. Einstein had trouble accepting it. So what is it and why is is critical to mitochondrial function?

It allows two subatomic particles or waves that were once bound together to become separated by any distance and still react or communicate instantaneously with one another. The the more inflammation/temperature you accept in your environment the more the electrons and protons act like particles. The more they act like particles the less likely they can be entangled. It does not matter if this linkage of particles happens in your brain or heart's mitochondria, or if the distance is trillions of light years apart. This is one of the most bizarre and hard things for people to accept when they learn about QED. Yet, it has been verified to be true hundreds of times now in experiments.

Inside a mitochondria, there is a very delicate quantum process that is able to take two separate electrons or protons and make them do things to act as one. It requires perfect functioning of the *iron sulfur cores* within our cytochromes. When this happens entangled electrons become very sensitive even to the smallest scale magnetic fields we can imagine. You maybe thinking at this point, I have lost my mind, but everything I just wrote has proven to work in biology already, in the magneto-navigation of how a European Robin migrates using the Earth's magnetic flux lines from the Earth's poles and the equator. Most people do not know nor realize these facts. They are published. They know even less how this ties to their everyday life. That will change in this series.

What should be becoming clear to you is how a mitochondria fundamentally works now, is not what is currently in your biochemistry book. I told you earlier in the series that mitochondria are small nano-electromagnets. The magnet is important for entangling electrons by using their "spin state" and the frequency of light released. Fundamentally, mitochondria are creators of entangled subatomic waves/particles from the unpaired electrons of free radicals.

Free radicals are formed by single-electron oxidation or reduction of an atom (Carbon) or molecule: an example is the production of superoxide by the electron transport chain in mitochondria. *If a mitochondria cannot form free radicals to*

signal, diseases result. The best example is T2D. In this disease, mitochondria can not make superoxide free radicals to signal properly from cytochrome one. Acute hyperglycemia in normal non diabetic normally generates superoxide too. This shows you carbs are not always bad. It also shows you why LCHF diets might present problems chronically. Superoxide comes from the ECT and is formed by single-electron oxidation or reduction of an atom or molecule. Normally, we expect to see superoxide creation from cytochrome complex I in the region of the FAD moiety, by the Fe-S cluster N1-a (iron sulfur cluster alert). This should make you ask a question, why can't a diabetic do this?

THE QUANTUM REASON METABOLIC SYNDROME HAPPENS

Did you know that the FAD moiety is found in cytochrome one is also found in cryptochromes of European robins, Monarch butterfly's, and fruit flies? Everyone of these life forms uses **the FAD moiety** to create magneto-reception to navigate in their environment. **Did you know that the FAD moiety absorbs only blue light?**

Why is this pattern of having FAD moieties **repeated** in most life forms who use light and magnetism? Every single one of these organisms has been shown to use FAD to entangle electrons with unpaired spins already in the literature! **All free radicals have electrons with unpaired spins.** I spoke to you about O_2 and its paramagnetism in Tensegrity 5. Diatomic oxygen (O_2) is actually a stable form of a radical in chemistry. Electrons are added to oxygen to make O2 in your mitochondria. It has electrons from two different sources that become one, and become entangled at your mitochondria. One of them is added by your mitochondria and is entangled with other electrons in other gases and chemicals in your body. I warned you this "*magnetic electron spin issue*" was going to be a big deal down the pike!
Summertime light has more blue light than other seasonal

light. Foods that grow in long cycles are broken down to electrons that have blue light photons that are raising the energy levels of these electrons thereby, “exciting these electrons” from their ground state.
The cytochrome complexes are known to have their own ‘*circadian reading ability*‘ but no one seems to know how it happens in humans.

I believe cytochrome one’s Fe-S cluster N1a uses **inelastic quantum tunneling** to detect vibrational changes in blue light excited electrons. This is how Raman spectroscopy works in astrophysics. Human olfaction uses this type of tunneling. Olfaction is the oldest sense in evolutionary history and tied to the brain’s original 3 layered neocortex. This is not a new found evolutionary adaptation.
The spin information is then transferred to the water surrounding the mitochondria by exciting and altering the hydrogen bonding networks with light release. The signal is sent everywhere in the cell over the water cabling and tensegrity system of collagen coherently. The signal is instantaneously sent all over the body, and specifically to the *organ clocks* in the liver in the brain to fine tune the system.
When blue light hits the FAD moiety it knocks out an electron out of the FAD part of cytochrome 1 which generates a quantum signal in the FeS cluster N1a. This is sent to other tissues and the brain to precisely yoke the seasonal photons in the blue range with to keep the synchrony with the SCN in the brain and body clocks in tissues and the liver. When this signaling is broken all hell breaks loose. European robin’s, monarch butterfly’s, and fruit flies, all use light mediated FAD moieties to detect light and magnetic signals use quantum entanglement. Sounds hard to believe but it is all been experimentally proven. **It’s time for you to upgrade your game to reverse your disease and reach for optimal.**
Might the Fe-S cluster in the human cytochromes also be detecting the magnetic fluxes in its own mitochondria or

within the tissues it is located in? I think you can guess my answer. When you have a perennial summer signal from light, you desynchronize the circadian clocks and your Rolex can't tell quantum time anywhere. This is fundamentally how Metabolic Syndrome begins in quantized fashion.

THE COSMIC WAND OF DIABETES: IT IS ALSO A DISEASE OF LIGHT LIKE MS IS:

This breakdown in T2D occurs because the iron-sulfur cores can no longer tunnel electrons properly because their atomic distances separate inside the core and become larger causing us to lose energy. That energy is in the form of light frequencies that are not similar to the one normally generated in cytochrome 1. This becomes a critical point, as you will soon see.

Here we see the cosmic wand of thermodynamics at play, yet again. Anytime we go above 14 Angstroms, electron tunneling stops in Fe-S cytochromes clusters. One you stop electron tunneling you lose the ability to entangle the unpaired electrons of superoxide because they are not being made. *Leptin resistance is a synonym for the inability to tunnel electrons in mitochondria.*

Electron tunneling also has specific and tight sub-molecular relationships with light frequencies released from the mitochondria matrix as well. When you live a summer lifestyle 24/7, and live within a microwave oven in your planet's ionosphere, your transition metals (Fe and Mo) and sulfur atomic radii expand in your cytochromes, and this is what destroys your ability to tunnel electrons and make superoxide. The distance is greater than 14 Angstroms.

During sleep is when we are most effective in using electrons as waves, while having a small distance to tunnel. During awake hours when the sun is out exercise is the other way in which we can tunnel electrons while keeping the distance to tunneling lower than 14 Angstroms. This is why exercise is associated with free radical generation, sweating, and heat

release from your mitochondria. All of this ties back to the edge where the quantum mechanisms of electrons and protons meets the statistical laws of thermodynamics in mass equivalence.

Most people understand that when water cools it expands when it is ice. What people forget to realize is that when liquid water is heated by infrared light it shrinks naturally. In liquid water in cells, low density water clusters predominate, and hence water volume shrinks when heated by infrared light released from mitochondria. I cannot stress how critical these relationships are to one another. This shrinks cell volumes and mitochondrial volumes just using heat and water's interaction. This is why ice expands when water cools. It also points out why cold thermogenesis works fundamentally because cold increase heat release from mitochondria naturally. This makes you more energy efficient. This makes water the ideal substance for life, because of Einstein's mass equivalence equation. Anything that condenses carries more energy thermodynamically.

Ultimately, this is a mass equivalence effect; remember anything that loses energy gets larger in the world we observe. This is why the heart gets bigger in heart failure and why the brain swells in pseudotumor cerebri. Both of these disease are associated with bad mitochondria. It is also why people get fat, and stay fat when they eat nothing but fat or protein. Size and shapes change in key areas of the cytochromes are where these changes occur. Since science can't see well in these small spaces, they act as if it is not there. But our observations of cold thermogenesis uncoupling and IR heat release during exercise show these effects are present in mitochondria.

When temperature rises and you can't sweat correctly or you can't uncouple well in cold, this changes signaling in the mitochondria of every cell in your body and superoxide seems to disappear from your mitochondria. The only way to recover this effect is a cold environmental stimulus because it increases the amount of low density cluster in water so the

liquid water can shrink when mitochondria recover the ability to release IR heat again. How do we know this happens in reality? Well people with T2D have altered sweating patterns but most clinicians don't understand how critical a symptom this is. This is why it is part of my Leptin Rx.

Remember we spoke about EPR in this series before? Superoxide has a strong EPR signal because it has unpaired electrons in it that we can track. **In type 2 diabetes, the EPR signal vanishes.**

What is EPR again? EPR = Electron spin resonance. Sound familiar?

It is a widely used technique for studying free radicals, and other paramagnetic species like O2 and DHA, It is sometimes called electron spin resonance spectroscopy (ESR). This is alternately referred to as "electron paramagnetic resonance" (EPR) spectroscopy. It is conceptually related to nuclear magnetic resonance (MRI), though electrons resonate with higher-frequency fields at a given fixed magnetic field than do most nuclei.

As electron current flow slows, the resultant magnetic field generated within the mitochondria also shrinks. This loss of magnetism is also felt big time in the FAD moiety 3D molecular arrangement. When ECT slows it needs the higher powered photon to set the stage to make superoxide. Eukaryotic "magnetic sense" is built directly into their mitochondria everywhere mitochondria are found in tissues. This means any free radicals you do make, can be used for signaling that is yoked, fine tuned and coupled properly to physiologic functioning. When superoxide is missing, cell signaling declines, which destroys its metastability. If a cell is not metastable it can not read or react the environment it is in. *A cell needs to be metastable to entangle electrons and protons in their mitochondria. That is what classic leptin resistance is at its core.*

This is leads to intramolecular chaos in the hydrogen bonding network just outside the mitochondria. Simultaneously, the inner and outer mitochondrial membranes no longer work well to generate the magnetic field and DHA is lost chronically from cell membranes. These coupled actions all act in unison, to affect the special catalytic ability of molybdenum to generate xanthine oxidase. Why is this critical?
As a free radical, superoxide has a strong EPR signal because of its unpaired electron, and it is possible to detect superoxide directly using this method when its abundance is high enough. In a mitochondria this is nearly impossible to see in vivo because we have no way of measuring the quantum effect yet, but we know this is happening because of EPR. For practical purposes, this can be achieved only in vitro under non-physiological conditions, when we use a high pH, this acts to slows the spontaneous dismutation with the enzyme xanthine oxidase. Xanthine oxidase makes massive amounts of superoxide. It requires molybdenum as a catalyst to function. Molybdenum no longer works to generate xanthine oxidase when non native EMF is present, because its ATOMIC RADIUS increases. As this happens, it loses its ability to be an electron sink allowing the wrong frequencies of light to be released from the mitochondrial matrix. As the electron sink is lost, so is the associated magnetic flux.

The reason Molybdenum is a catalyst is because it has a very reactive amount of D shell electrons that perfectly balanced quantized micro-molecular motions in cytochromes Fe-S clusters. When size or motions change atomic relationships via alterations in oscillations and vibrations, thermodynamic relationships change on things with a cell membrane. Mitochondria have two of them. When this happens, it results in resonant coupling degradation between cell membranes and mitochondria. Molybdenum loses its perfect size to energy ratio and can no longer be the perfect quantum catalyst for

the reaction proteins in the cytochrome are counting on for physiologic function. The light reaction center in plants uses magnesium to liberate electrons in the exciton. Mitochondria use Molybdenum.

What links both elements? ***Magnesium, and Molybdenum are also natural paramagnetic materials***, ***like oxygen***. They react to the magnetic field they are within.
Remember pH is tied to proton concentrations and related to temperature fluctuations and magnetic flux. A high pH means we should expect to see more superoxide and lower temperatures and stronger magnetic flux. In T2D, we have a disease that creates a low pH and lower magnetic flux within our mitochondria. All inflammation is positively charged and is associated with increased temperature. Higher temperatures degrade magnetism because of the Curie temperature relationship. This defines what leptin resistance is.

MORE METAL MAGIC?

Why does Chromium help diabetics? It is the only transition metal that is antiferromagnetic. Antimagnetic materials can cause a net magnetic effect to manifest when mitochondria have lost their normal ability to generate a magnetic field. Antiferromagnets can couple to ferromagnets, through a mechanism known as exchange bias. This stabilizes a bad magnet and slows ubiquination rates in diabetics. The Fe-S clusters in T2D function poorly therefore they stimulate signaling to *increase ubiquination rates* in protein polymers and protein synthesis. Anytime we increase protein synthesis we are increasing the times our cells *have to measure the quantum state* of its local environment as its redox potential changes. When we measure things in QED it alters the experiment. This error measurement is usually tied to the location of the hydrogen ion: H+. In Tensegrity 5 and my talk in Pasadena I told you hydrogen was a “rogue element”. Now you are going to find out why it is the baddest molecular ionic metal in all of biology. Remember that H+ is a key cog in water chemistry

and the ionic plasma that surrounds and is inside a cell. When temperature rises, magnetism falls, and water's dielectric values plummet to affect H+ biochemistry. As the dielectric value of water changes, it affects how hydrogen protons react with RNA/DNA and water. This is how epigenetics expression is ALTERED! The process is caused by protons tunneling in a process called tautomerization. This has huge implication for protein synthesis, since RNA makes proteins. This is why ubiquination rates are increased in diabetes and in many Autoimmune conditions. This is why antibodies are sometimes made and sometimes absent. In fact, anytime muscle atrophy's, it stimulates ubiquination rates because of this H+ effect. I would remind you here that mitochondria are loaded with H+ in their matricies. Do you still think ancestral health has a beat on autoimmune conditions, obesity, or anything else? The observation doctors make in diabetics, autoimmunity, and in those with fibromyalgia is that all signaling degrades in these patients at some level. In solid state electronics, antiferromagnets are used to form spin valves, which are the basis of magnetic sensors including modern hard drive read heads. *Chromium does the same thing in poorly functioning mitochondria by increasing electrical resistance within the inner mitochondrial membrane to stimulate a weak magnetic flux force.* This is one supplement LCHF fan's should consider using.

SUMMARY

Chronically, when we have a lot of positive charges and a low pH, as we do in T2D, how do subatomic particles react in this scenario?

Can a mitochondria that is damaged in this way change its protons in the mitochondrial matrix to neutrons to limit damage of a low pH? Remember neutrons have no positive charge. Do they?

Yes, they can.

How?

Another queer quantum process is at work in your mitochondria.

How does changing matter screw with metastability in a cell up chronically?

Altering mass equivalence is the answer.

Remember in the last two series and in the Random musings blogs I have been hinting that the sun and a mitochondria fundamentally work similarly. I know this concept seemed hard to accept a year ago because your observations of the sun and the small organelles in your cell do not appear to release light the same way. But I have shown you they do both release light. The sun releases visible light in a wide spectrum of frequency and wavelength. Your mitochondria releases light in specific frequencies from the cytochromes because entanglement fundamentally requires a monochromatic light. Mitochondria makes infra red light, normally. So how is this process the same in us and the sun? How does it differ specifically, to lead to different sources of light?

This will be the topic of the next blog.

Medicine and Ancestral health knowledge operates in the classical Newtonian world, while life occurs at the ledge between thermodynamics and quantum mechanisms. A cell is designed to be metastable all the time and far from equilibrium. It takes full advantage of one specific frequency of life that maximally condenses water because of how water absorbs heat. The LDW fraction of water is most successful in doing this and LDW is found in liquid water. This is why the second law of thermodynamics is statistical and probabilistic. Probabilities are the domain of quantum computers. Your mitochondria are quantized and this is why they deal with subatomic particles like electrons, protons, and free radicals

and not food macronutrients. Its time you realize it too.

Life organizes at the ledge of the quantum world, beneath the thermodynamic statistical facade to remain metastable to operate and entangle electrons and protons to make a cell coherent during sleep. This is why sleep is critcal. A cell has to be built to straddle the thermodynamic statistical facade and the queer quantum mechanisms that are built into your mitochondria by evolutionary design.

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