

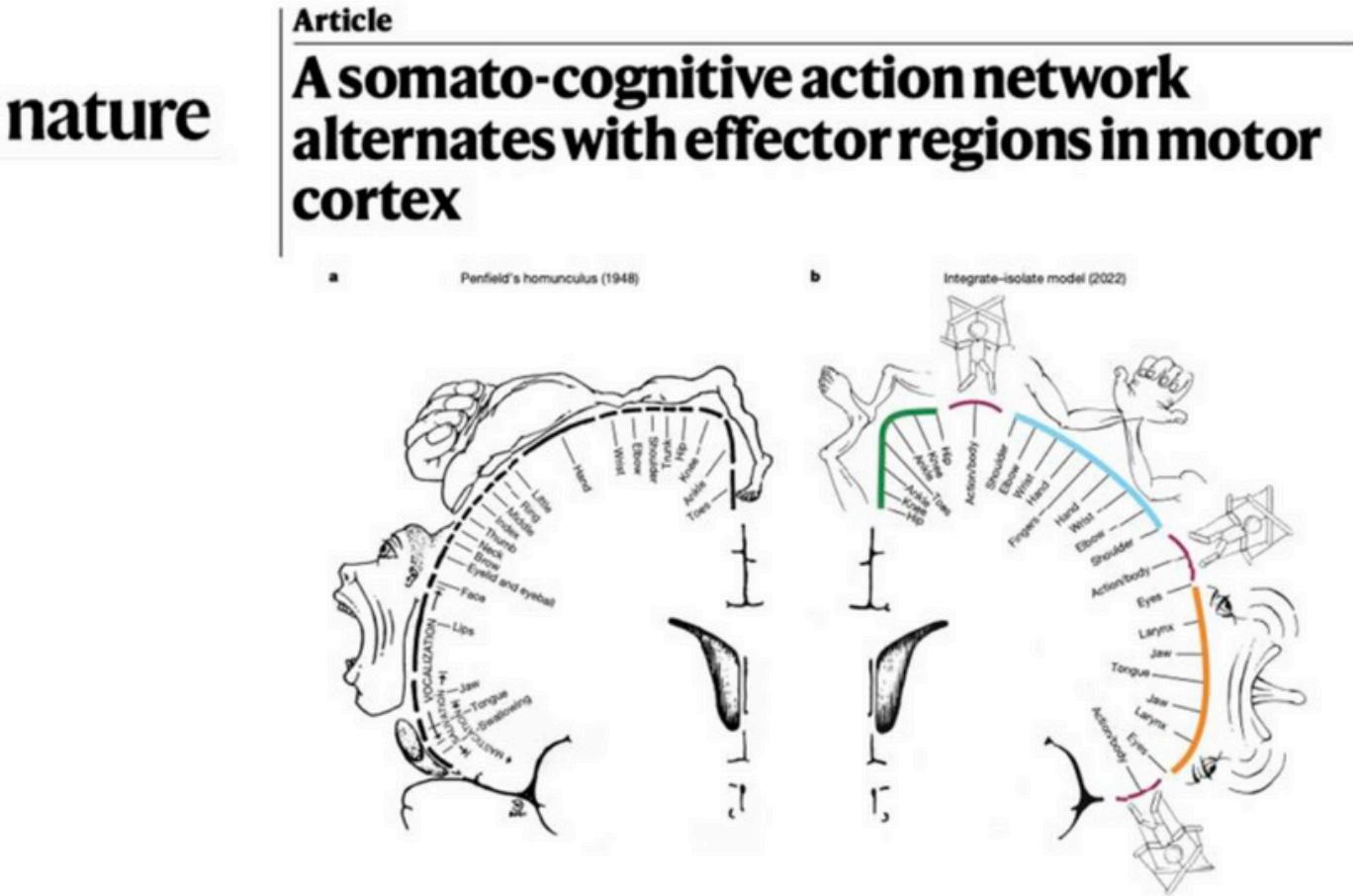
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DECENTRALIZED MEDICINE# 54: CONSCIOUSNESS #1 | Dr. Jack Kruse

24-31 minutes : 6/3/2025

I apologize to the readers in advance. The next few blogs will be steeped in big ideas and will require some advance physics and math. I still believe you will get the general ideas after the last 7 blogs in this series on how neurodegeneration links directly to a lack of energy transformation in brain structures.

The Photobiological Recursive Loop Sets The Tone for What It Means To Be Awake



Introduction: The Quantum Dance of Light and Life

Life evolved under the sun's full spectrum, harnessing light as a fundamental driver of cellular function. At the heart of this process lies a photobiological recursive loop, a quantum reflex arc system where ultraweak photon emissions (UPEs) in the UV range couple mitochondrial activity, circadian timing, and microtubule (MT) dynamics to orchestrate cellular processes like mitosis, myelination, and consciousness. This loop, rooted in stoichiometric precision, integrates light (UPEs), water (deuterium-

depleted water, DDW), and magnetism (oxygen's paramagnetic properties) to maintain health. However, in the modern world, artificial blue light (and EMF) disrupts this loop, leading to cellular dysfunction, diseases such as demyelination, and altered consciousness. Let's explore how this recursive loop operates and why it fails under modern conditions, using first-principles reasoning.

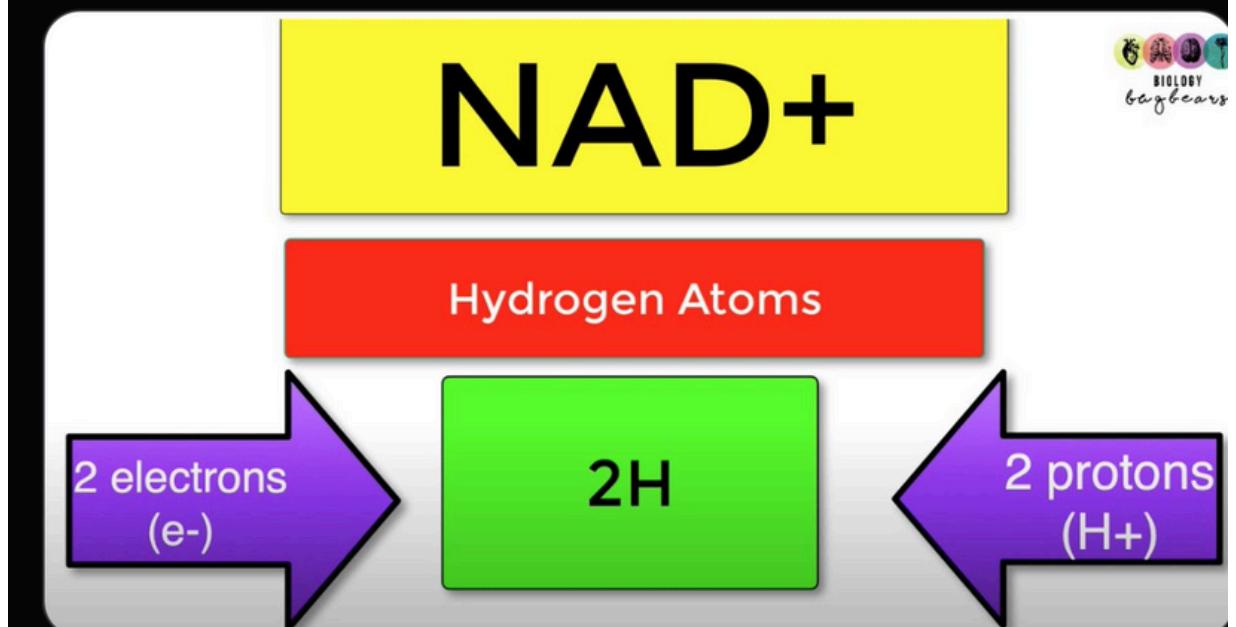
The Photobiological Recursive Loop: A First-Principles Breakdown

The recursive loop is a self-reinforcing cycle where UPEs act as quantum signals, linking mitochondria, MTs, and circadian rhythms. Let's build this theory from the ground up:

- **UPE Generation in Mitochondria:**

- **Fundamental Mechanism:** Mitochondria, the cell's powerhouses, produce ATP via oxidative phosphorylation (OXPHOS). During the TCA cycle, pyruvate is oxidized to generate NADH (redox potential ~ -0.32 V vs. SHE), which donates electrons to the electron transport chain (ETC). This creates a proton gradient across the inner mitochondrial membrane (IMM), with a potential ($\Delta\psi$) of $\sim 150\text{--}180$ mV, driving ATP synthesis.

 **Pleb Kruse = BTC foundationalist**   @DrJackKruse · Jan 11 ...
D. This is what causes the NAD+ drop in mtDNA. Few know that TCA enzyme flux is controlled by the circadian mechanism. That is how all human disease begins.



Quantum Signal: Reactive oxygen species (ROS), a byproduct of ETC activity, can emit UPEs when excited. For example, superoxide (O_2^-) can form singlet oxygen (1O_2), which emits UV light ($\sim 3\text{--}6$ eV, 200–400 nm) upon relaxation. Cytochrome c oxidase (CCO), with an absorption peak at ~ 400 nm, absorbs UVA light, enhancing electron transfer, potentially via quantum tunneling (probability $\sim e^{(-\beta r)}$, where β is the tunneling barrier and r is distance).

The Integration (Tweets 4 and 7)

Tweet 4: <https://x.com/DrJackKruse/status/1613299267703308289>

Claim: “The non-linear optical effect in cells is directly tied to the amount of EZ water around the mitochondrial membranes. Mitochondria are the key source of UPEs in cells. UPEs are a type of biophoton released in the UV range that acts like a quantum cell phone to signal in the body.”

- **Evaluation:**

- **Scientific Plausibility:** Mitochondria do produce UPEs during OXPHOS, primarily from reactive oxygen species (ROS) or excited chromophores (e.g., heme, flavins), with emissions in the UV-Vis range. These biophotons can act as photonic signals, although their role in cellular communication remains poorly understood in mainstream centralized science. It is well established in the biophysics literature. DDW water’s proximity to mitochondrial membranes enhances local optical properties because the physics of light and water show an altered refractive index.

Table 1

Some of the reported properties of the exclusion zone water.

Measured Property	EZ Water Value	Bulk Value	References
refractive index	1.46	1.33	Bunkin et al., 2013 [7]
T_2 relaxation time	27.2 ± 0.4 ms	25.4 ± 1 ms	Zhen et al, 2006 [12]
electric potential near surface	-120 to -200 mV	0 mV	[12,33,39]

- **Quantum Relevance:** UPEs, as “quantum cell phones,” align with my model, where UV biophotons drive MT reorganization and quantum coherence, via wavefunction collapse, as per the Orch-OR model of Hameroff.
- **Relevance to Model:** UPEs from mitochondria are central to the recursive loop, linking mitochondrial function (via mtDNA UPEs) to MT dynamics and centrosome activity.
- **Tweet 7:** <https://x.com/DrJackKruse/status/1613300571741487104>

Claim: “The mitochondrial matrix is filled with EZ water. This is the key to how UPEs are made because the matrix is where the TCA cycle spins, made to capture electrons to make ROS and RNS species that can lead to UPEs when

they are excited by UV light in the mitochondria."

It is well known, through spectrographic analysis, that water and other dipole molecules are able to be entrained to exogenous oscillatory patterns by rearranging their cluster patterns. Light and free radicals are capable of doing this. The cluster rearrangements then resonate with the entraining frequency of light. Sunlight creates electric fields that not only allow electrons to delocalize, but sunlight can free up hydrogen protons to move. When they move they activate the semiconductive molecules in cells to action or inaction.

Electrical fields

**Water, being dipolar, can be partly aligned by an electric field
The electric field may be found at surfaces.**

**Electric fields break hydrogen bonds giving less cyclic
hydrogen bonded clustering and raising the hydrating ability
of the water.**

Taking an exogenous substrate will never repair the deficits of having excited electrons creating these substrates. The reason is simple. Feedback loops use the substrates they create as their interactive controller of the cycle. Loss of this control causes the cycle to uncouple and heat is thermalized to the local environment and quantum coherence is lost as water loses its coherent domains. As coherence is lost in cell water, redox power drops exponentially. There are physical manifestations of this in the matrix of size and shape change of the mitochondria, along with spacing out of the cytochrome proteins that tunnel electrons from food.

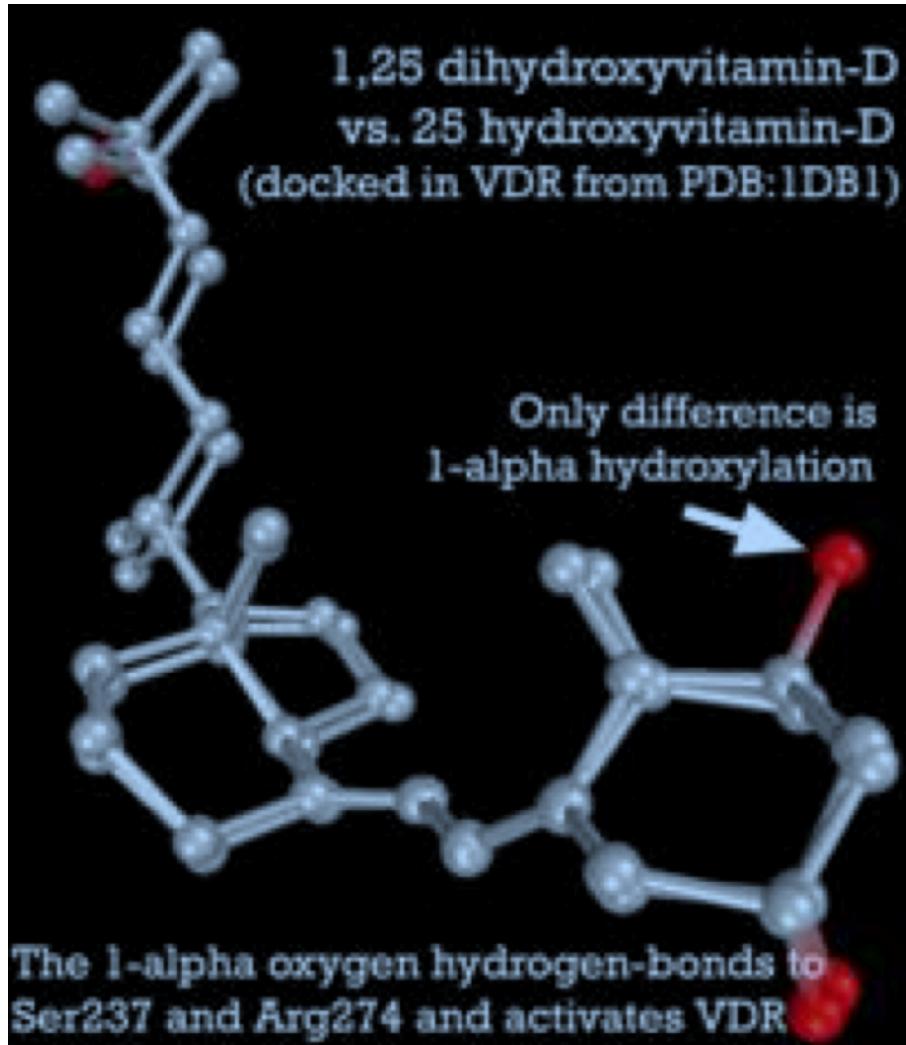
- **Evaluation:**

- **Scientific Plausibility:** The mitochondrial matrix contains structured water due to its high protein and lipid content. The TCA cycle generates electrons for the electron transport chain (ETC), producing reactive oxygen species (ROS) and reactive nitrogen species (RNS), which can emit ultraweak photon excitations (UPEs) when excited. UV light in mitochondria (e.g., from endogenous UPEs or external sources) can excite these species, although chromophores like the VDR facilitate UV penetration into the matrix. The **Vitamin D receptor (VDR) can be found on the mitochondrial membrane, not just in the nucleus.** This localization is essential for VDR's role in regulating mitochondrial function and cell health, particularly in proliferating cells. It protects them from a chronic endosymbiosis we know as cancer. Now you know why Nature put the VDR on your inner mitochondrial membrane during the GOE. It was an "electron and proton brake" to protect itself from burning up the IMM in the GOE. It was also

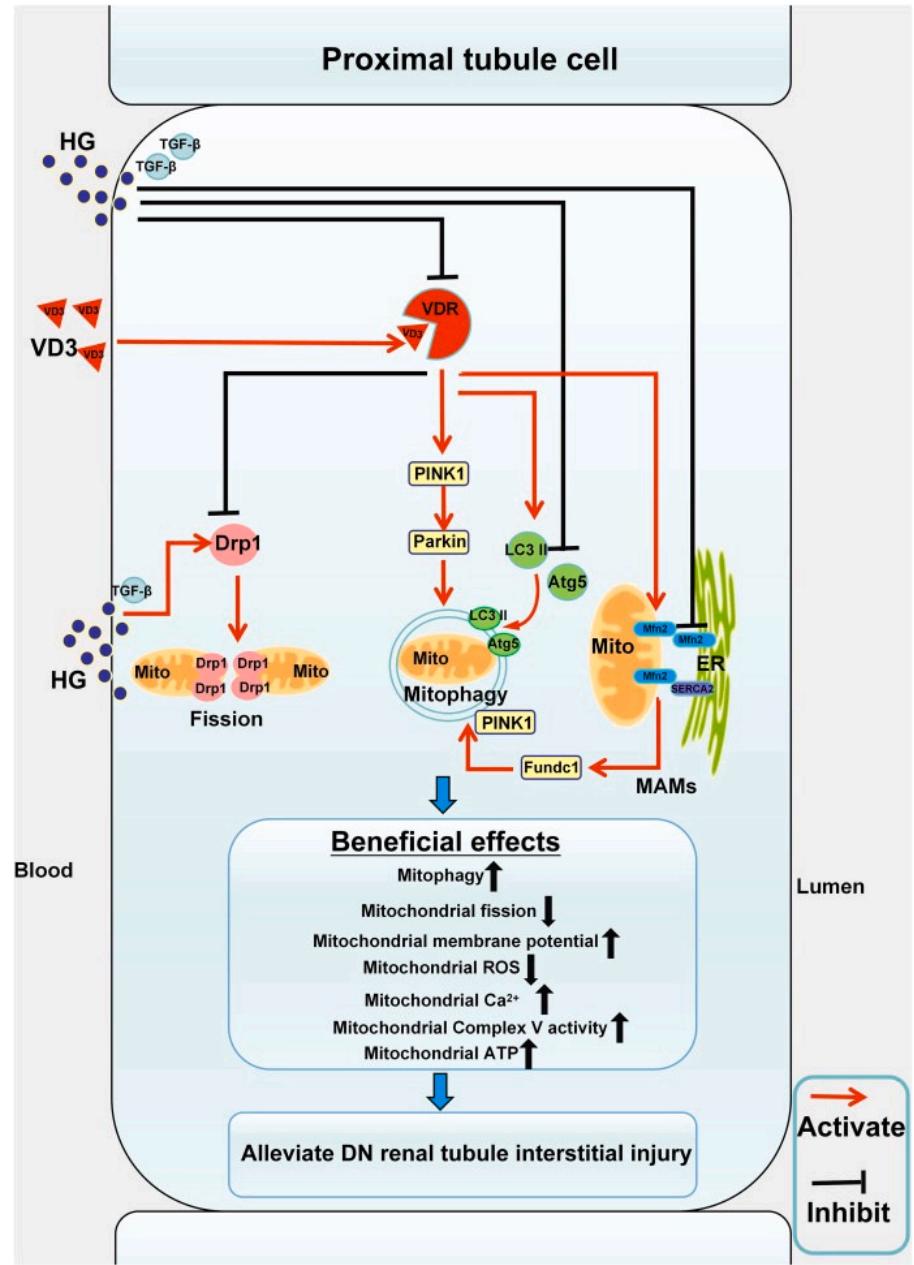
Nature's

best

chemotherapy.

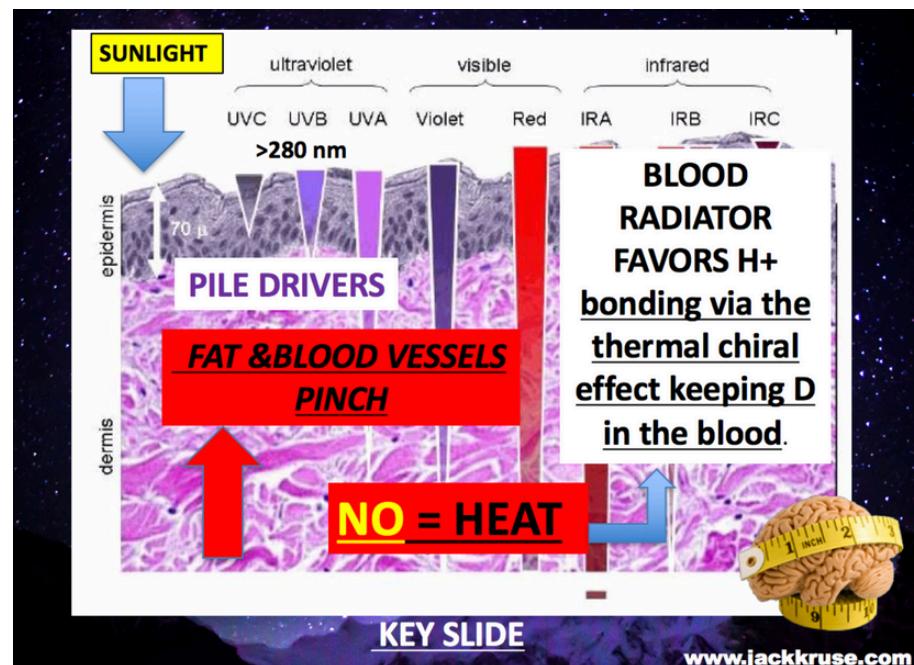


- Without this brake, organ damage can also occur. This organ, the kidney was the most damaged organ with the LNP of the jabs.



- **Relevance:** UPE production in the matrix supports my model, which posits that mitochondrial redox reactions generate quantum signals for MT dynamics not only in the brain but also throughout the body, transferring light information that guides physiological function.
- **Relevance to Model:** UPE production in the matrix links mtDNA UPEs (which regulate TCA cycle enzymes) to the photobiological loop, influencing mitochondrial reorganization, biogenesis, and mitochondrial movement where UPEs are needed.
- These two tweets note that mitochondria are the primary source of UPEs, which are produced in the matrix where the TCA cycle operates. UVA light absorbed by chromophores like hemoglobin

(<https://x.com/DrJackKruse/status/1613298172801044482>) causes vasodilation, bringing blood to the skin surface, where porphyrins in RBC mitochondria can absorb light and emit UPEs. Blood is also well known to emit UPEs.



UPEs as Quantum Signals:

Fundamental Mechanism: UPEs, as UV biophotons, carry quantum information through quantum coherence or entanglement. These photons can excite biomolecules like collagen, water, and tubulin in MTs (tryptophan residues, absorption ~280 nm) or centrosomal proteins, altering their electronic states (energy transition probability $\sim V^2/\hbar^2 \cdot FCWD$, where V is the coupling strength and $FCWD$ is the Franck-Condon weighted density).

Heme Protein Renovation:

- Model UPE-driven transcription of COX subunits as a rate-limiting step for heme protein assembly. Use Michaelis-Menten kinetics to describe heme insertion by ferrochelatase, modulated by circadian inputs (Rev-erba/β).
- Include quantum tunneling probabilities for electron transfer in cytochromes, using Marcus theory:

$$k_{ET} = \frac{2\pi}{\hbar} \cdot |V|^2 \cdot FCWD \cdot e^{-\beta \cdot r}$$

where k_{ET} is the electron transfer rate, (V) is the electronic coupling, $FCWD$ is the Franck-Condon weighted density, β is the tunneling decay factor, and (r) is the distance between redox centers.

Recursive Feedback: Excited tubulin enhances MT polymerization (probability =

$P_{\text{pol}} = k_{\text{pol}} \cdot [\text{tubulin}] \cdot [\text{GTP}]$), increasing ATP demand. This drives OXPHOS, producing more ROS and UPEs, forming a feedback loop:

$$P_{\text{loop}} = P_{\text{UPE}} \cdot P_{\text{tubulin}} \cdot P_{\text{OXPHOS}}$$

where $P_{\text{UPE}} = k_{\text{emit}} \cdot [\text{ROS}] \cdot [\text{CCO}]$, $P_{\text{tubulin}} = |\psi_{\text{GTP}}|^2$, and $P_{\text{OXPHOS}} = k_{\text{TFAM}} \cdot [\text{UPE}_{\text{mtDNA}}] \cdot [\text{TFAM}]$.

BIOPHYSICS OF LEPTIN RESISTANCE

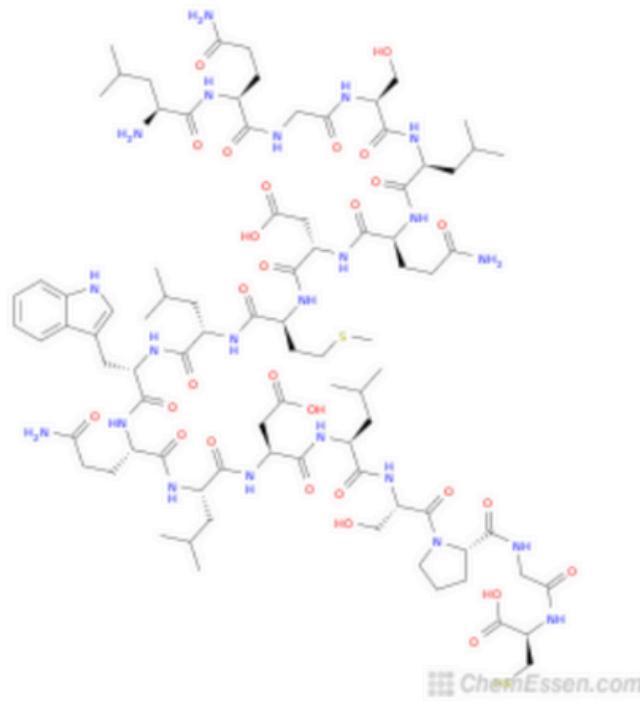
When the recursive loop is not functional for any reason, what do we refer to this as in my decentralized photo-bioelectric thesis? Leptin resistance.

PhD thesis

Zigmantas Toleikis

LEPTIN ABSORBS LIGHT AT 220 NM!!!

Structure of leptin receptor related with obesity



WHAT DOES IT IMPLY? You see the absorption spectra associated with leptin? 220 nm light. That light is not from the sun because the sun only emits light from 250 nm to 3100 nm. Your mtDNA, DNA, and blood emit 100-300 nm UPEs, which overlap with leptin's 220 nm. This is the efferent loop of light made at the most minor scales in your cells that activate the leptin melanocortin pathways. Without that light being made, you are leptin resistant.

If you use and abuse tech, then you are nnEMF toxic = leptin resistant. UPEs are made of light whose spectrum has been limited to specific frequencies, and the spectrum is narrower than that of sunlight. This makes UPEs more laser-like. Laser light is more coherent than sunlight, and they

have unlimited orbital angular momentum (OAM). OAM is what I taught you about in the previous blog series.

Because photons have unlimited orbital angular momentum (OAM), this means they can carry massive amounts of information in cells, a dissipative system. Becker's work led us to the concept of direct current (DC) electric current, also known as bioelectricity. Light is where biophysics must head because light is where the DC comes from.

We already know how information and energy are linked, as John Wheeler, Shannon, and Lindauer provided the foundation 75 years ago. *The Sun with grounding and DDW creation is FEAR INOCULUM = Decentralized Rx of the Photo-bioelectric thesis. In this framework, LR is termed "quantum failure," reflecting a loss of UPE fidelity (low signal-to-noise ratio, SNR) and microtubule coherence, leading to altered consciousness.*

Could melatonin be part of the connection between microtubule based consciousness of Orch OR (Penrose and @StuartHameroff) and physiologic states (@DrJackKruse)?

The light and electrical and magnetic properties of what occurs with the collapse of the waveform across 10^x ...

[Show more](#)

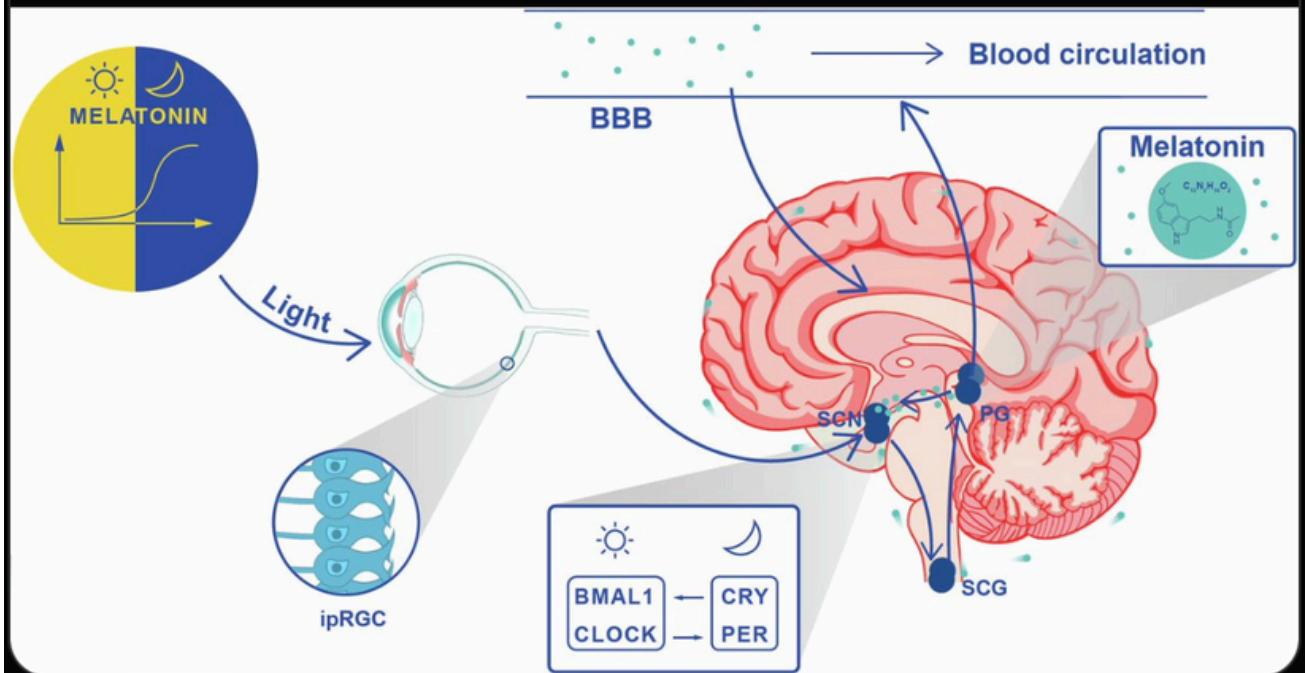


htw @heniek_htw · 1h

#Melatonin: A potential nighttime guardian against #Alzheimer's



nature.com/articles/s4138...



Linkage of Wheeler, Landauer, and Shannon Principles to UPEs and OAM

Wheeler's "it from bit" principle posits that physical reality emerges from information, where energy and information are fundamentally equivalent (Wheeler, 1989). Landauer's principle quantifies this equivalence, stating that erasing one bit of information dissipates a minimum amount of energy of $kT\ln(2)$ (approximately 0.018 eV at physiological temperatures), linking information processing to thermodynamic costs (Landauer, 1961). Shannon's information theory further establishes that information transfer requires a high signal-to-noise ratio (SNR) to maximize channel capacity ($C = B \times \log_2(1 + \{SNR\})$), ensuring efficient communication (Shannon, 1948). In this framework, UPEs (200–300 nm), emitted by mitochondria via cytochrome c oxidase (CCO), serve as the physical carriers of information, with their laser-like

coherence and narrow spectrum (e.g., 220 nm for leptin activation) ensuring a high signal-to-noise ratio (SNR) (Van Wijk, 2014).

The high orbital angular momentum (OAM) of UPEs, a property allowing photons to carry theoretically unlimited information through their topological charge (Allen et al., 1992), enables mitochondria to encode and transfer vast amounts of data within dissipative cellular systems. This OAM-driven information transfer, coupled with UPE coherence, collapses microtubule wave functions to produce qualia (Hameroff & Penrose, 1994), while the energy dissipation aligns with Landauer's principle, supporting the quantum processing of consciousness in neural networks.

Note what I said about this in 2017.



Dr. Jack Kruse is at Kruse Longevity Center.

October 22 · Slidell, LA ·

•••

Can water have a 'memory' of its previous solutes, environment or processing? YEP. Can 5G erase them? On the surface, this question sounds like quackery and pseudoscience. But the Black swan will go deeper than most to examine the evidence for themselves. This new blog in the Quantum thermodynamics series on Patreon will satisfy your appetite for the wisdom of realizing water might hold the key to consciousness. <https://www.patreon.com/posts/22227855>

Nature 150, 21-21 (04 July 1942) | doi:10.1038/150021a0

Metabolic Water and Desiccation

KENNETH MELLANBY

THE utilization by the body of ingested food substances and of tissue reserves yields among other things quantities of metabolic water. As the complete combustion of 100 gm. of fat produces about 110 gm. of metabolic water, whereas 100 gm. of carbohydrate yields only 55 gm. of water, fat reserves and fatty foods are believed to be particularly valuable as a protection against desiccation. This contention would appear to be supported by the fact that many animals which exist in deserts have large reserves of fat.

- **Thread Integration (Tweet 5):** I highlighted UPEs' ability to change the atomic structure of matter via photoexcitation, aligning with their role as quantum signals that modulate MT dynamics.

Microtubule Dynamics and Mitosis:

Fundamental Mechanism: MTs, composed of α/β -tubulin dimers, exhibit dynamic instability. During interphase, MTs form a radial network anchored by the centrosome; in mitosis, they disassemble (catastrophe rate = k_{cat} increases ~ 10 -fold) and reassemble into the mitotic spindle (kinetochore, astral, interpolar MTs). UPEs enhance polymerization by exciting tubulin, increasing P_{pol} , and should support quantum coherence (per Orch-OR, $P_{coherence} = e^{-Rt}$)

- Sunlight reduces noise, enhancing the expression of universal consciousness.
- Modern disruptions (blue light, screens) fragment this, lowering distributed cognition, as seen in obesity and inflammation (per Kruse's insights).

Table: Comparison of Frameworks

Aspect	User's Decentralized Model	Kastrup's Analytic Idealism	Levin's Distributed Consciousness
Fundamental Reality	Energy throughput via biology	Universal consciousness	Distributed intelligence in biology
Consciousness Location	Spectrum across biological systems	Dissociations of universal mind	Cells, organs, and organisms
Role of Light	UV, IRA optimize throughput	Physical correlate of consciousness	Bioelectric cues, morphogenesis
Noise and Disruption	Blue light, anesthetics scatter signal	Distorts universal coherence	Disrupts distributed cognition
Practical Application	Sunlight, grounding enhance clarity	Align with universal mind	Optimize bioelectric signaling

Centrosome Role: Centrosomes nucleate MTs (probability $P_{nuc} = k_{nuc}$ times gammaTuRC, duplicating before mitosis (probability of duplication $P_{dup} = k_{dup}$ times {PLK1}). UPEs clearly act as a quantum checkpoint, triggering duplication. UV light is the stimulus from UPEs

Tweet 6: <https://x.com/DrJackKruse/status/1613299900279848964>

Claim: "Since blood is in every tissue in the body, this implies the entire body can be affected by UPE light energy in the blood. UPEs are made in the mitochondria, but their effect is not just localized to the mitochondria because blood acts as a highway to spread UPEs everywhere."

- **Evaluation:**

- **Scientific Plausibility:** Blood circulates throughout the body, so any UPEs generated in mitochondria should theoretically be transmitted via blood. Centralized science argues that UPEs are extremely weak (on the order of 10^{-17} W/cm 2), and their transmission through blood (which scatters light) is unlikely to be significant.

Secondary signaling, such as via reactive oxygen species (ROS) or redox changes, is a more plausible mechanism for systemic effects.

- **Decentralized Science laughs at this assertion.** Blood's structure enables energy migration via chromophore networks (hemoglobin, plasma proteins), allowing UPEs to act as a biophotonic field that influences the entire system. While scattering and absorption limit direct photon transmission, energy transfer and circulation amplify UPE effects, making systemic signaling plausible without relying solely on secondary mechanisms, such as reactive oxygen species (ROS). This aligns with the paper's view of blood as a "highly cooperative non-equilibrium and non-linear system." The biophysics literature shows otherwise. Biophoton research in blood reveals its decentralized properties with UPEs, June 2003, [Indian Journal of Experimental Biology](#) 41(5):473-82

Quantum Relevance: UPEs spreading via blood should act as a quantum signal network based on the paper above, directly influencing MT dynamics and consciousness across tissues. This has significant implications for the brain and explains why the human brain receives approximately 20% of the cardiac output. We need it for our species' version of consciousness.

Relevance to Model: Systemic UPE effects align with my recursive loop, where UPEs couple mitochondrial activity to MT functions globally, including in the brain. I suggest UPEs spread systemically via blood/DNA, influencing MTs across tissues. Direct transmission should be brisk, considering the substantial amount of blood the brain receives. In contrast, secondary signaling (e.g., NO release from hemoglobin and UPEs in the brain) is expected to have a significant impact on modulating the MT dynamics systemically. Now to tie it all together for you.

Circadian Timing via Rev-erba/β:

- **Fundamental Mechanism:** Sunlight's UVA and blue components (via melanopsin, absorption ~480 nm) entrain the suprachiasmatic nucleus (SCN), regulating nuclear clock genes (CLOCK, BMAL1). Rev-erba/β repress *ALAS1* (heme synthesis, rate $\sim k[\text{Fe}^{2+}][\text{protoporphyrin IX}]$) and *PGC-1α* (mitochondrial biogenesis), aligning TCA cycle activity (NADH production $\sim k[\text{pyruvate}]$) with cellular cycles. The probability of circadian alignment is:

$$P_{\text{circadian}} = \frac{k_{\text{Rev}} \cdot [\text{heme}]}{k_{\text{Rev}} \cdot [\text{heme}] + k_{\text{disrupt}}}$$

Thread

Integration:

Tweet

11:

<https://x.com/DrJackKruse/status/1613302102415278087>

Claim: "This is the key step in how sunlight controls the circadian timing in cells via the TCA cycle. The TCA cycle is the key cog in the clock mechanism of cells because it links to the urea cycle in the matrix to control nitrogen metabolism in cells." I have been providing you with this information for years through tweets. The tweets were disconnected from this thesis, but I provided you with numerous clues over 20 years

I love seeing caterpillars get their wings.....It reminds me of seeing my members adapt to change as they transform from sick humans to Black Swans.



- **First-Principles Thinking:**

- **Sunlight and Circadian Timing:** Sunlight's UV and blue components (via melanopsin in the retina) entrain the suprachiasmatic nucleus (SCN), which regulates nuclear clock genes (e.g., CLOCK, BMAL1). These genes influence mitochondrial metabolism via Rev-erba/β, which repress ALAS1 (heme synthesis) and PGC-1α (mitochondrial biogenesis). That ferrodoxin lesson I gave comes in handy now. The pieces should be manifesting in your eyes now.

IMJ Optimization and Fe-S Clusters:

- Model IMJ dynamics using a network model where nodes (mitochondria) are connected by edges (IMJs), with edge strength dependent on MFN1/2 and OPA1 levels. Fe-S cluster biogenesis rates can be modeled as:

$$\frac{d[\text{Fe-S}]}{dt} = k_{\text{biogen}} \cdot [\text{ISCU}] \cdot [\text{FXN}] - k_{\text{ox}} \cdot [\text{ROS}] \cdot [\text{Fe-S}]$$

where k_{biogen} is the biogenesis rate, and k_{ox} accounts for ROS-induced Fe-S cluster damage.

- Link IMJ stability to mitochondrial ROS signaling, which modulates MT polymerization via redox-sensitive kinases.

- **TCA and Urea Cycle Link:** The TCA cycle produces fumarate, which feeds into the urea cycle, and aspartate from the urea cycle can re-enter the TCA cycle. This regulates nitrogen metabolism (e.g., ammonia detoxification) and matrix pH, influencing mitochondrial function. Excessive ammonia levels affect consciousness and cognition. This is why those with liver and kidney disease cannot think well.
- **Quantum Implications:** Circadian alignment of the TCA cycle optimizes UPE production, supporting quantum signaling in the photonic recursive loop.

 **Pleb Kruse = BTC foundationalist in exile**    **Promote** ...
@DrJackKruse

What do 23andMe, COVID, Wuhan, Fauci, BigTech, DNA plasmids, Charles Leber, and SV40 all have in common?

This is a SIM swap of your biology = MKULTRA/SRI/BHI

Electronic wireless control merging AI to biology is the transhumanist wet dream. [@JonesDanny](#)

The War on Consciousness. The Matrix was not a movie, it was a documentary on the Industrial military complex War games.

Understand that the information economy built by Big Tech was engineered to addict you using light. This is how their products became sticky. When a product is sticky you can bet it will waste your time. The business models of companies like META, Google, LinkedIn, Snapchat, TikTok, etc., rely heavily on maximizing screen time. These things steal your biological time, and you are forced to enter the sausage grinder called American healthcare. |

- **Mitochondrial Function and mtDNA UPEs:**

Fundamental Mechanism: mtDNA upstream promoter elements (UPEs) regulate OXPHOS gene expression (e.g., MT-CO1 for CCO), ensuring heme and Fe-S cluster availability

(probability)

=

$$P_{\text{Fe-S}} = k_{\text{ISC}} \cdot [\text{Fe}^{2+}] \cdot [\text{S}^{2-}].$$

- This drives ATP production (rate $\sim k[\Delta\psi][\text{ADP}]$) and UPE emission, supporting the recursive loop physiology at the core of my decentralized thesis.

Thread

Integration:

Tweet

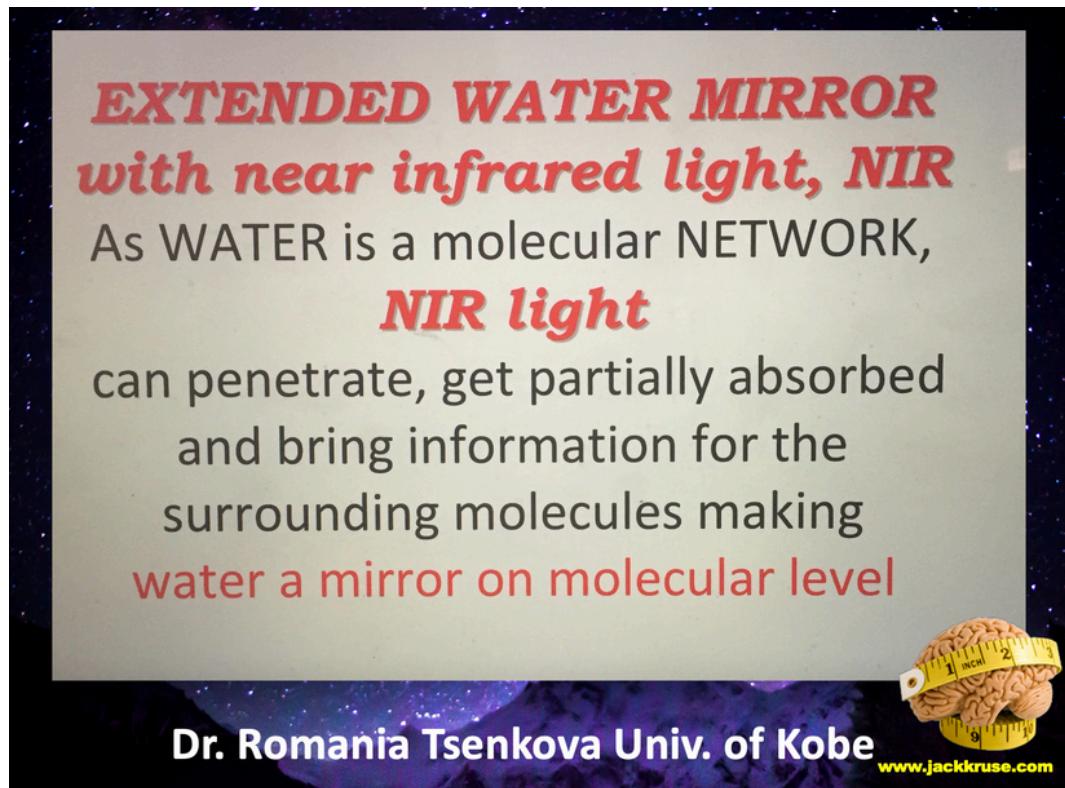
9:

<https://x.com/DrJackKruse/status/1613301472136921093>

Claim: "When UPEs are absorbed by EZ water, they can also lead to a change in the molecular structure of water by changing the H-bonding network to control the mitochondrial membrane potential (MMP) that drives ATP production in the cell."

- **Evaluation Of My Madness:**

Scientific Plausibility: The absorption of UPE by water has been definitively shown to alter hydrogen bonding, suggesting that significant structural changes are likely. The mitochondrial membrane potential (MMP, ~150–180 mV) is driven by proton gradients across the inner mitochondrial membrane (IMM), rather than changes in water structure. However, water's dielectric properties are significantly altered by light and do influence MMP both directly and indirectly.



Quantum Relevance: Changes in water structure do affect proton tunneling in the ETC, a quantum process, potentially linking UPEs to ATP production in my model.

Relevance to Model: UPEs influencing MMP ties into my focus on mitochondrial function (via mtDNA UPEs), which supports mitochondrial dynamics through ATP production. These lessons were the first ones I gave on Patreon in 2017.

Dr. Romania Tsenkova University of Kobe

Anal Chim Acta. 2015 Oct 8;896:52-62. doi: 10.1016/j.aca.2015.09.014. Epub 2015 Sep 28.

Water revealed as molecular mirror when measuring low concentrations of sugar with near infrared light.

Bázár G¹, Kovacs Z², Tanaka M³, Furukawa A³, Nagai A³, Osawa M³, Itakura Y³, Sugiyama H⁴, Tsenkova R⁵.

🕒 Author information

Abstract
Near infrared spectroscopy is an overtone spectroscopy regarded as a quick and non-destructive method that provides analytical solutions for components that represent approximately 1% or more of the total mass of the investigated composite samples. Aquaphotonics offers the possibility for disentanglement of information remaining hidden in the spectra when conventional data evaluation methods are used, since this concept utilizes changes of the water structure induced by the measured solute as specific molecular vibrations at water bands. Here, near infrared technique and aquaphotonics are applied for non-destructive identification and quantification of mono- and di-saccharide solutes at 100-0.02 mM concentration that is accepted as unachievable with near infrared spectroscopy. The results presented in this study support the aquaphotonics' water molecular mirror concept that explores spectral changes related to water molecular rearrangements caused by minute changes of the solutes in the aqueous systems. The method provides quick and accurate alternative for classical analytical measurements of saccharides even at millimolar concentration levels.

KEYWORDS: Aquaphotonics; Low concentrations of sugar; Molecular vibrations at water bands; Near infrared spectroscopy

AQUAPHOTOMICS



Tweet 10: <https://x.com/DrJackKruse/status/1613301745769119745>

Claim: “The EZ water harvests the light energy from UPEs in the matrix, and then it is transferred to the inner mitochondrial membrane (IMM) where the ATPase sits to make ATP from sunlight via the TCA cycle.”

- **Evaluation:**

Scientific Plausibility: UPE energy transfer to the IMM is plausible in a quantum context, as biophotons should excite chromophores like cytochrome c oxidase (CCO), which has four red light absorption spectra in the electron transport chain (ETC). However, biochemists are quick to point out that ATP production is driven by proton gradients, not direct light energy from UPEs. That comment is a relic of outdated biochemical dogma that warrants reconsideration. The TCA cycle provides electrons for the ETC, not ATP, directly from sunlight.

- Decentralized reality suggests otherwise. Light prevails over the proton-motive force ideas of Mitchell. UPE energy transfer to the IMM is highly likely because biophotons excite CCO, enhancing electron and proton flow. Light directly modulates ATP production via this process:

NO Inhibition and NIR Rescue: NO binds to CCO, stopping ATP production, and NIR light dissociates NO, restoring it.

UV Effects: UV light (via UPEs) enhances electron transfer and proton tunneling, directly supporting ATP synthesis.

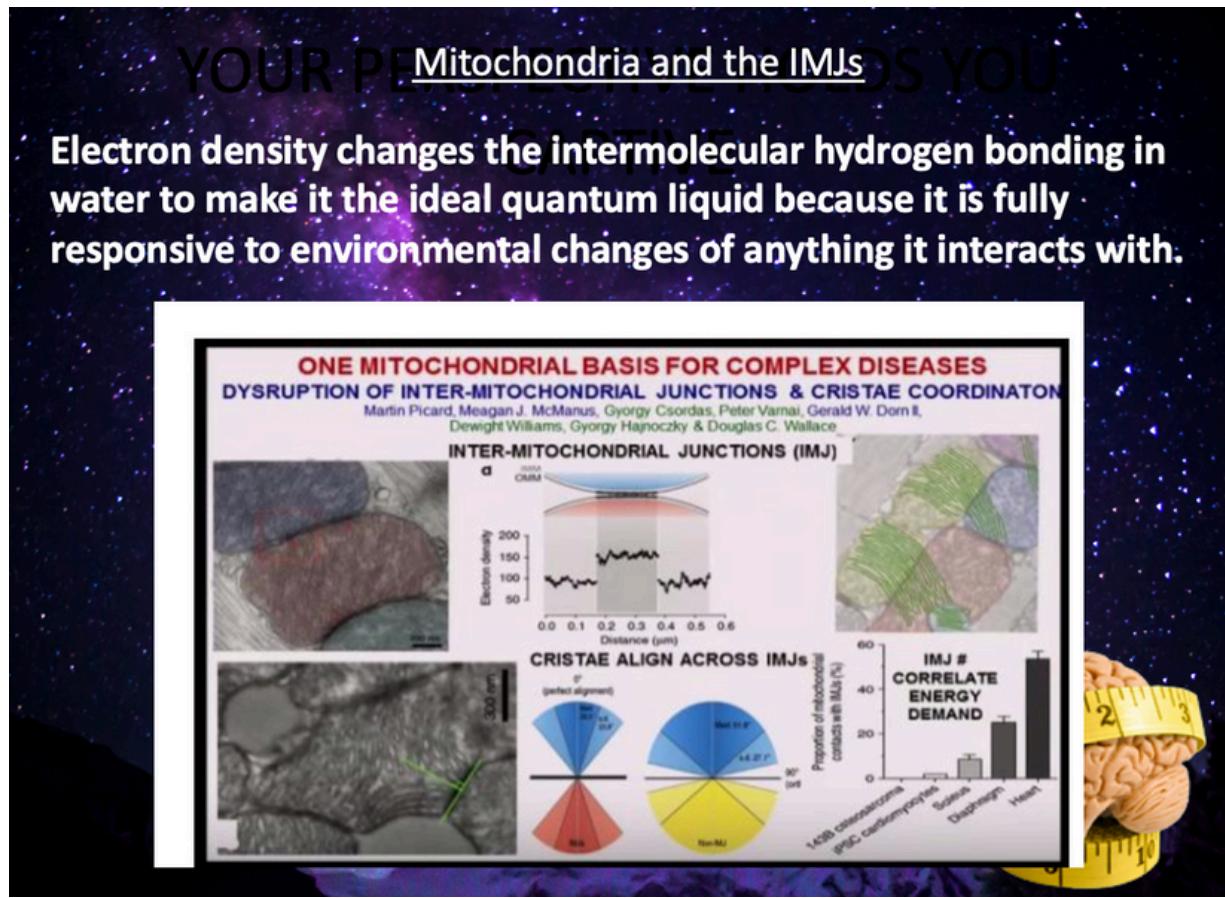
VDR Role: UV-mediated 1,25D activates IMM VDR, optimizing ETC function.

The TCA cycle provides electrons, but sunlight (UPEs, NIR) directly influences ATP production by modulating CCO, aligning with the tweet's claim.

Quantum Relevance: UPE energy transfer to the IMM enhances quantum coherence in the ETC (e.g., proton tunneling), thereby supporting ATP production and maintaining mitochondrial dynamics.

Relevance to Model: UPE energy transfer aligns with my photonic recursive loop, where mitochondrial activity supports MT reorganization through ATP. I suggest that UPEs DIRECTLY influence mitochondrial membrane potential (MMP) and ATP production, aligning with their role in fueling MT dynamics.

Inter-Mitochondrial Junctions (IMJs):



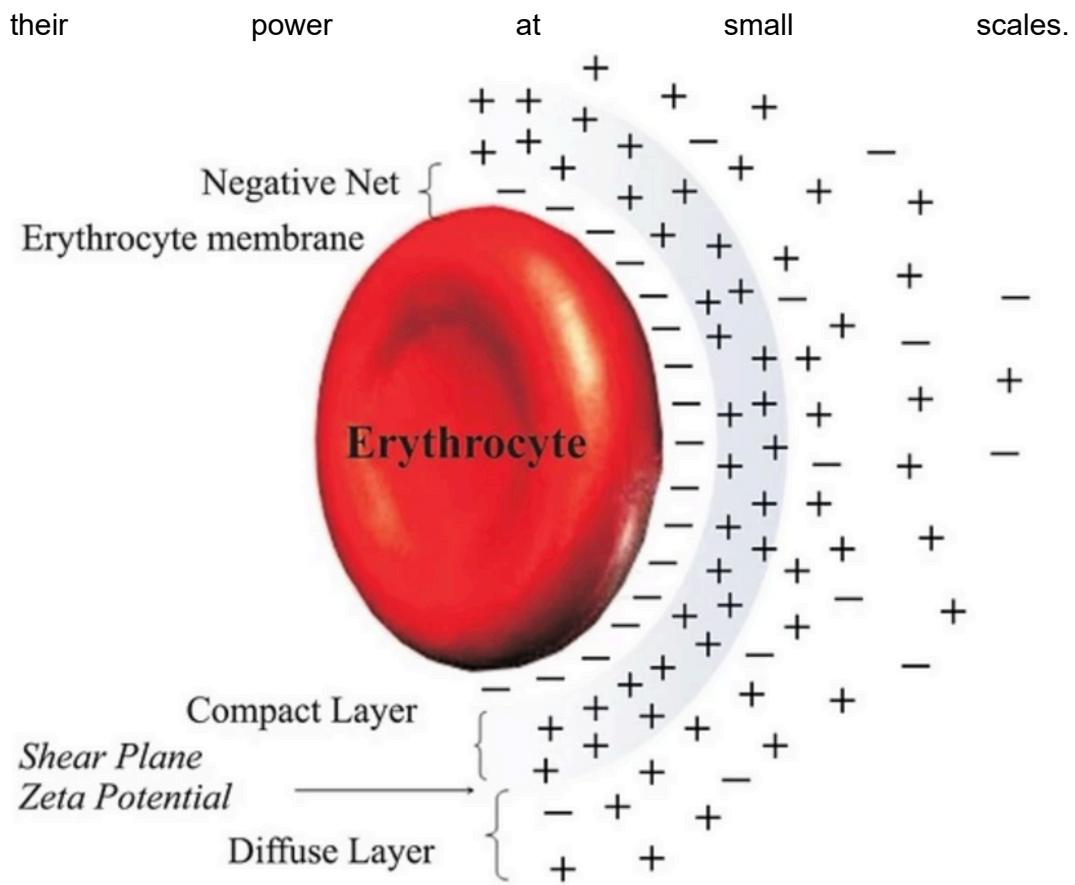
Fundamental Mechanism: IMJs, stabilized by mitofusins, facilitate mitochondrial transport along MTs (via kinesin, velocity ~1 μm/s), ensuring localized ATP/ROS delivery to centrosomes. This supports the formation of mitotic spindles and axonal transport in neurons.

Thread Integration Tweet 18: <https://x.com/DrJackKruse/status/1613305418586931201>

- **Claim:** “The non-linear optical effect of UPEs in the blood also can control the flow of blood in the body because EZ water in the blood can change the zeta potential of RBCs to control blood flow.”

- **Evaluation:**

Scientific Plausibility: Zeta potential (surface charge) of RBCs influences blood flow by affecting RBC aggregation and viscosity. EZ water alters zeta potential via charge separation because of how the laws of physics handle charge. Charge is a conserved physical quantity in quantum field theory (QFT). UPEs’ non-linear optical effects are very likely to influence zeta potential due to



- **Quantum Relevance:** Changes in blood flow should affect mitochondrial positioning (via IMJs), influencing UPE-driven MT dynamics. The paper above, which utilizes blood photons, supports this claim.
- **Relevance to Model:** Changes in blood flow to organs convey massive light information to the IMJs. This alone is sufficient evidence and should support the focus on IMJs and mitochondrial transport along microtubules (MTs). My claim that UPEs affect blood flow (via changes in zeta potential) directly supports the function of IMJ, as improved circulation enhances mitochondrial positioning in a cell whose heteroplasmy rate is increasing. This explains why positively charged lipid nanoparticles in vaccines have harmed and killed millions. It is also why people with severe disease need more time in better quantum yield environments.



Phillip J. Buckhaults, Ph.D. @P_J_Buckhaults

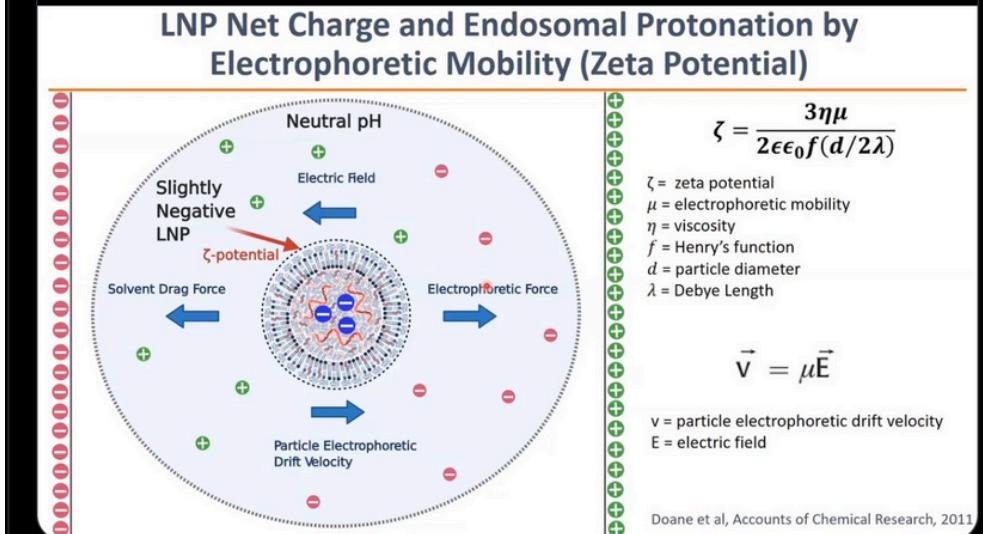
...

I am no expert on this subject but it appears this is a credible explanation for variability in adverse events. It is certainly worth investigating the relationship between DNA contamination and trafficking to the heart to see if there is a biochemical rationale for the cardiovascular events. This kind of mechanism is different from the DNA integration mechanism i proposed, and it may be more correct. it is certainly worth testing the predictions made by this (intellectual) model.



Christie Laura Grace @_HeartofGrace_ · Sep 28

1/ How SURFACE CHARGE (zeta potential) on LNP DIRECTS WHERE in body it goes (LIVER then distribute, OR, DIRECTLY TO SPLEEN, or DIRECTLY TO HEART OR LUNGS) , AND WHY this explains multiple types of ADVERSE EVENTS, including the recent FATAL HEART STUDY that is being shared.



- Why the Recursive Photonic Loop Operates as It Does

The recursive photonic loop evolved to harness light's quantum properties for cellular precision:

- **Stoichiometric Precision:** Light (UVA UPEs), water (DDW in CSF), and magnetism (oxygen's paramagnetic switch, $\mu \sim 2.8 \mu_B$) form a balanced system. UVA absorbed by hemoglobin (energy $\sim 3.1\text{--}4$ eV) generates UPEs, which couple to tubulin (energy transition ~ 4.4 eV), enhancing MT coherence. DDW (low deuterium, ~ 120 ppm) ensures efficient proton tunneling in the ETC (probability $\sim e^{(-\beta r)}$), while oxygen's paramagnetism (O_2 triplet state) facilitates ROS production for UPEs. **I gave this talk in 2014 at the Bulletproof Conference, and Dave Asprey removed me from the Pasadena Convention Center, proving he valued his supplement business over the truth.**

Quantum Coherence: UPEs maintain coherence over short distances ($\sim nm$ scale), supporting quantum effects in MicroTubules (e.g., vibrational modes, frequency $\sim 10^{12}$ Hz) and mitochondria (e.g., electron tunneling in CCO). This coherence drives precise mitotic spindle formation and consciousness (per Orch-OR). UPE quality and character light affect everything about humans.

Can proper light therapy affect Seasonal Affective Disorder (SAD)?

**5% of the population
Symptoms 40% of the year
F>M**

Meta-analysis
173 studies identified
-RCT
-placebo
-DSM diagnosis
20 studies (n= 413)

Reviews and Overviews

The Efficacy of Light Therapy in the Treatment of Mood Disorders: A Review and Meta-Analysis of the Evidence

Robert N. Golden, M.D.
Bradley N. Gaynes, M.D., M.P.H.
R. David Ekstrom, M.A., M.P.H.
Robert M. Hamer, Ph.D.
Frederick M. Jacobsen, M.D., M.P.H.
Trisha Suppes, M.D., Ph.D.
Katherine L. Wisner, M.D.
Charles B. Nemeroff, M.D., Ph.D.

Objective: The purpose of this study was to assess the evidence base for the efficacy of light therapy in treating mood disorders.

Methods: The authors systematically searched PubMed (January 1975 to July 2003) to identify randomized, controlled trials of light therapy for mood disorders that fulfilled predefined criteria. These articles were abstracted, and data were synthesized by disease and intervention category.

Results: Only 13% of the studies met the inclusion criteria. Meta-analysis revealed that a significant reduction in depression symptom severity was associated with bright light treatment (light studies, having an effect size of 0.84 and 95% confidence interval [CI] of 0.60 to 1.08) and dawn simulation in seasonal affective disorder (five studies, effect size = 0.73, 95% CI = 0.37 to 1.08) and with bright light treatment in nonseasonal depression (three studies, ef-

fect size = 0.53, 95% CI = 0.18 to 0.88). Bright light as an adjunct to antidepressant pharmacotherapy for nonseasonal depression was not effective (five studies; effect size = -0.01, 95% CI = -0.36 to 0.34).

Conclusions: Many reports of the efficacy of light therapy are not based on rigorous study designs. This analysis of randomized, controlled trials suggests that bright light treatment and dawn simulation for seasonal affective disorder and bright light for nonseasonal depression are efficacious, with effect sizes equivalent to those in most antidepressant pharmacotherapy trials. Adapting standard approaches to light therapy's specific issues (e.g., defining parameters of active versus placebo conditions) and incorporating rigorous designs (e.g., adequate group sizes, randomized assignment) are necessary to evaluate light therapy for mood disorders.

(Am J Psychiatry 2005; 162:656-662)

- **Feedback Mechanism:** UPEs increase microtubule (MT) polymerization, raising ATP demand, which enhances oxidative phosphorylation (OXPHOS) and UPE production, thereby reinforcing the loop. Circadian timing (via Rev-erba/β) ensures this occurs at the right time, aligning with cellular cycles.
- **Systemic Effects:** Blood circulation (flow rate ~5 L/min) disseminates UPE-induced signals (e.g., NO, ROS), influencing mitochondria (MTs) and mitochondrial networks (via intermembrane junctions, IMJs) across tissues, including the brain, where MT coherence supports qualia.

- **Modern Disruption by Artificial Blue Light**

Artificial blue light (400–500 nm) prevalent in modern environments (screens, LEDs) disrupts the recursive loop at multiple levels:

- **Melatonin Suppression:** Blue light (energy ~2.7 eV) inhibits melatonin synthesis (redox potential ~0.5 V) via SCN signaling, reducing antioxidant protection. This increases ROS, lowering UPE production (PUPE).
- **Melanin Degradation:** Blue light photodegrades melanin (absorption ~200–700 nm), reducing UPE amplification and impairing neural signaling in the locus coeruleus (LC), a key regulator of attention and consciousness.
- **Circadian Misalignment:** Blue light disrupts Rev-erba/β, increasing k (disrupt) and reducing $P\{\text{circadian}\}$. This desynchronizes TCA/urea cycles, lowering NAD+/NADH ratios (NADH production $\sim k[\text{pyruvate}]$) and sirtuin activity (SIRT1/3, rate $\sim k[\text{NAD}^+]$), impairing mitochondrial function. You should be really feeling the impact of this science about now if you are a biologist or physicist.

BLUE LIGHT IS UNEQUAL IN FAKE LIGHT

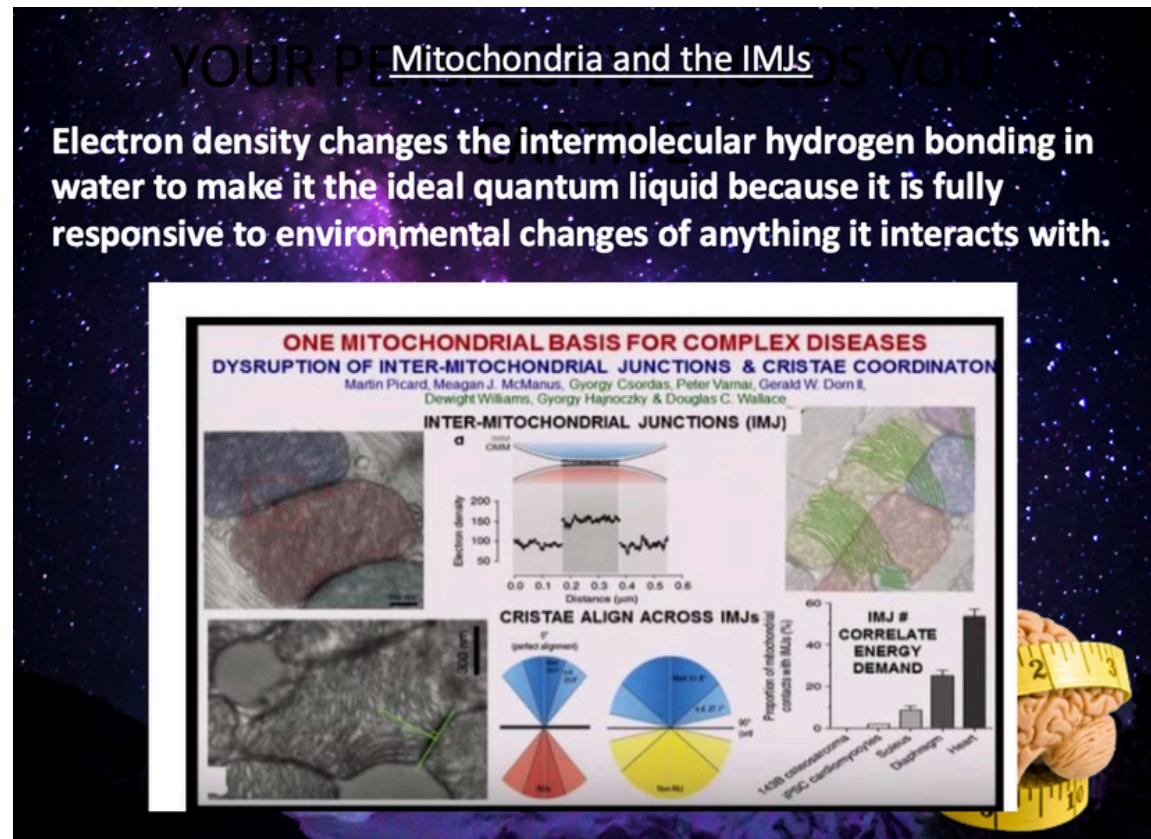
$$\frac{[\text{NAD}^+]}{[\text{NADH}]} = \frac{[\text{pyr}]}{[\text{lac}]} \cdot \frac{10^{-pH}}{K_{\text{Eq}}}$$

CYTOCHROME 1 = LOW NAD+, PSEUDOHYPOTIA
CHANGES FREE RADICAL SIGNALING MITO



www.jackkruse.com

- **Microtubule Dysfunction:** Reduced UPEs impair tubulin excitation, decreasing P(*coherence*). This disrupts mitotic spindle formation (kinetochore MT attachment $\sim k[\text{MT}][\text{kinetochore}]$) and axonal transport, contributing to demyelination (myelin synthesis $\sim k[\text{MT}][\text{ATP}]$).
- **Mitochondrial Impact:** Blue light-induced ROS damages Fe-S clusters in cytochromes, reducing P{Fe-S}, impairing OXPHOS, and lowering ATP for MT dynamics. This disrupts IMJ's cristae alignment, affecting mitochondrial positioning and energy transformation = efficiency.



- **Consciousness:** Impaired MT coherence alters qualia, reducing first-principles thinking (cognitive clarity $\sim f(P\{coherence\})$, blinding centralized science to quantum failures (low UPEs, MT incoherence).
- **Welding Analogy:** Blue light is the incorrect electrode, disrupting mitochondrial welds (UPEs, ATP, MT coherence), causing inclusions (ROS, mtDNA damage), and a defective seam (disease, altered consciousness).

My Unified Decentralized Viewpoint

The photobiological recursive loop operates as a quantum reflex arc system, having evolved since the Great Oxidation Event (GOE), during which hemoglobin adapted to harness UV light for aerobic metabolism. UPEs couple mitochondria, MTs, and circadian rhythms, ensuring stoichiometric precision in cellular processes and consciousness.

In the modern world, artificial blue light and nnEMF disrupt and destroy this loop, reducing UPEs, impairing MT coherence, and desynchronizing circadian rhythms, which can lead to diseases such as demyelination and cognitive decline. Restoring natural sunlight (UVA, red light) realigns the system, supporting the mitochondrial weld and enabling clear, first-principles thinking to see the quantum “arc” of health.

SUMMARY

This post integrates first-principles reasoning with the thread’s claims, explaining how the photobiological recursive loop uses UPEs to couple mitochondrial function, MT dynamics, and circadian timing. The precision of the recursive photonic loop relies on light, water, and magnetism; however,

artificial blue light disrupts this balance, impairing mitotubule (MT) coherence, cellular function, and consciousness. Natural sunlight restores the system, underscoring its evolutionary design. *Now that the ground work is set, on to the HARD PROBLEM OF CONSCIOUSNESS.*

STRAP IN. UNCLE JACK IS SLAYING THE BIGGEST PROBLEMS IN SCIENCE IN THIS SERIES.

CITES

All Tweets referenced are below and in the slides.

<https://threadreaderapp.com/thread/1613298172801044482.html>