

Hypothesis

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Hypothesis

OM-to-Genome: A Low-Cost Vibrational Pathway to Stress and Inflammation Control for One Health

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Abstract

Stress- and inflammation-related disorders remain the dominant global health burdens, yet few preventive tools operate across molecular, psychological, and social scales. We hypothesize that *OM-induced vibrational coherence* functions as a mathematical–cum-biophysical regulator capable of harmonizing energy from cellular metabolism to genomic expression through the vagal–microbiome–brain axis. Following the physical law that energy transforms but is conserved, the OM-to-Genome continuum extends this principle to living systems, where **metabolic, immune, reproductive, and neural energies** represent biological analogues of potential, chemical, and kinetic forms. Mathematics provides the syntax of these transformations—frequency, proportion, and rhythm—governing energy construction and deconstruction from birth to death. Within the author’s *Evolution-to-Solution* framework, OM vibration mediates these conversions, translating conscious intent into physiological order. Evidence from neuroimaging, electrophysiology, and molecular biology supports this pathway as a low-cost, culturally neutral mechanism for stress regulation and immune balance. Integrating mathematics, physics, chemistry, and physiology thus yields a unified *One Health* model linking awareness and biology through a single law of energy coherence.

Keywords: mathematical physiology; vibrational biology; energy coherence; systems biology; neuroimmune regulation; one health; mind–body integration; mathematics of life

1. Background

1.1. Global Context

Chronic psychosocial stress and persistent low-grade inflammation account for most non-communicable morbidity worldwide [1–3]. Excessive sympathetic activity drains metabolic and immune reserves, whereas insufficient parasympathetic recovery blocks repair. Pharmacological therapy seldom restores energetic proportion or prevents social propagation of stress.

1.2. From Physics to Biology

Physics defines energy as the capacity to do work, manifesting in interchangeable potential, kinetic, thermal, and electromagnetic forms. Chemistry translates this into molecular bonds and reaction enthalpy; biology inherits it as **metabolic, immune, reproductive, and neural energy**, each obeying conservation and transformation laws [4–6]. Schrödinger described life as a system that “feeds on negative entropy” [7]. Fröhlich and Noble proposed that coherent oscillations sustain cellular organisation [8,9].

The OM-to-Genome hypothesis extends this logic: vibration is the universal medium through which these transformations achieve coherence.

Box 1. Mathematical foundation of the OM-to-Genome continuum.

Domain	Energy Expression	Governing Mathematics	Representative Process
Physics	Potential ↔ kinetic	Wave equations, frequency ratios	Vibrational resonance (OM as standing wave)
Chemistry	Chemical ↔ thermal	Reaction kinetics, entropy functions	ATP synthesis, redox cycling
Biology	Neural ↔ immune ↔ reproductive	Non-linear feedback, fractals	Homeostasis, circadian rhythms
Physiology & Consciousness	Informational & intentional	↔ Phase synchrony	Awareness-driven autonomic regulation

Health represents the *solution* to a dynamic equation in which biological variables oscillate within harmonic ranges; disease denotes deviation from these solutions.

Box 2. Mathematics as the Master Law of Order: From Zero to Infinity.

Mathematics governs every transformation in nature. It is the invisible syntax that shapes both external physico-chemical reactions and the inner physiological dynamics of living beings. Even apparent randomness follows probability fields that maintain systemic balance; when these underlying equations collapse, coherence fails, leading to structural or physiological breakdown.

*Energy therefore operates through organised proportion, scaling from **zero**—the potential state—to **infinity**, the manifested state of consciousness.*

The OM-to-Genome continuum interprets this progression as a living equation in which order, not chance, sustains existence. Disease and disorder represent points where mathematical symmetry diverges, while health signifies the restoration of that symmetry through coherent vibration.

1.3. Philosophical Convergence

Ancient philosophies perceived vibration as the universal code of creation, and modern science recognises mathematics as the invisible grammar of that code. Both describe the same principle: energy behaves according to definable ratios and harmonics. Randomness beyond these boundaries equates to entropy—the collapse of mathematical order and the onset of biological disease. Systems biology now identifies oscillatory gene networks and biochemical cycles as the measurable signatures of vitality [10-12].

1.4. Dual Laboratories

The author’s *Evolution-to-Solution* model distinguishes two complementary laboratories: an **inner** laboratory of awareness and intention and an **outer** laboratory of measurable physiology. Linking them converts subjective regulation into quantifiable pattern—a direct expression of mathematical symmetry. Originally this *Evolution-to-Solution* concept originated from the author’s earlier expert commentary outlining how mosquito molecular physiology can transcend vector control toward integrative biological understanding and societal harmony [13]. This foundational idea—“*Translating Physiology to Philosophy: Research for Peace*”—provided the conceptual seed for extending the *OM-to-Genome* hypothesis into a cross-disciplinary continuum uniting biology, mathematics, and consciousness.

1.5. Empirical Evidence

OM chanting enhances parasympathetic tone and HRV [14], increases alpha–theta EEG coherence [15], and suppresses limbic activation [16]. Similar effects follow electrical vagal stimulation [17]. Controlled vibration thus restores proportionality across autonomic, immune, and genomic systems.

Recent molecular findings further reinforce this continuum between external vibrational stimuli and internal genomic responses. For example, *Saini et al.* [18] demonstrated that a Sensory Appendage Protein (SAP) in *Anopheles culicifacies* acts as a biochemical bridge linking external chemical oscillations—such as exposure to pyrethroid compounds—to internal neuronal and metabolic signaling. This SAP-mediated “alarm” translates environmental perturbation into altered neurochemical communication with the mosquito brain, revealing how molecular resonance at the sensory periphery can reorganize physiological states. Analogously, in humans, vibrational practices such as OM chanting might engage homologous chemosensory–neural pathways that synchronize immune and neuroendocrine responses to environmental stressors. The SAP discovery thus provides a molecular precedent for vibration-driven information flow from the external milieu to central regulatory networks—a pattern conserved across species and consistent with the proposed *OM-to-Genome* continuum.

2. The Hypothesis

OM-induced vibrational coherence is a mathematically governed process of energy transduction converting conscious potential into physiological order.

Within the *Evolution-to-Solution* framework, vibration functions as the operator transforming energy across **acoustic** → **bio-electric** → **biochemical** → **genomic** domains.

Mathematically, each step maintains total system energy; health corresponds to resonance conditions where conversion functions align in phase.

3. Testing and Evidence Plan

A multilevel strategy will test whether OM practice improves **energy efficiency and coherence** across acoustic, neural, immunologic, and genomic scales:

- Randomised trials measuring HRV, oxygen consumption, and cortisol (entropy reduction).
- EEG/fMRI analysis for network efficiency approaching small-world optimality.
- Genomic and epigenetic profiling (NF-κB ↓, BDNF ↑).
- Microbiome diversity and SCFA production as chemical-energy feedback.
- Community studies assessing HRV phase synchrony among participants.

Integrated datasets will yield an **Energy Coherence Index (ECI)**—a quantitative marker of dynamic equilibrium.

4. Implications and One Health Integration

If resonance validates energy conservation across scales, it defines a universal law of **bio-energetic coherence** linking personal health and planetary sustainability.

Within *One Health*, inner equilibrium mirrors ecological stability—both are low-entropy, rhythmically regulated systems.

Policies could include:

- Mathematics-to-Physiology curricula reconnecting quantitative and biological literacy.
- Ten-minute OM sessions in schools and workplaces.
- Hospital *Energy Coherence Indices* as systemic-balance biomarkers.
- Acoustic-ecology standards protecting vibrational wellbeing.

Because proportion is universal, such practices remain culturally inclusive and economically scalable.

5. Limitations and Future Research

Empirical issues include sound-parameter standardization, multimodal synchrony, expectancy control, and the need for non-linear analytics (fractal, entropy, network topology). Mathematical and computational models should simulate resonance transfer; AI tools can detect coherence signatures in real time.

Comparative biology must test evolutionary conservation of these energetic laws.

Humility is essential: our equations only approximate the living mathematics of consciousness.

6. Conclusions

Health is the *solution* to a dynamic equation of energy transformation.

The **OM-to-Genome continuum** unites mathematics, physics, chemistry, and biology through the operational principle of vibration.

When awareness initiates coherent resonance, energy reorganises from potential to physiological order. Integrating these insights into public health offers a low-cost, culturally neutral means to manage stress and inflammation while advancing sustainability.

The *Evolution-to-Solution* initiative reframes medicine as a **science of coherence**, where inner and outer laboratories converge and where

OM = Order of Matter

The next frontier of healthcare may not be another molecule but the recovery of mathematical coherence—the recognition that life itself is a continuous solution of an equation extending from **zero** to **infinity**. Health is therefore the persistent resolution of proportion; consciousness, its self-aware variable. The arithmetic of harmony unites matter, energy, and mind within one continuum.

The conceptual bridge from energy to order is summarized schematically in **Figure 1**, which depicts the *Mathematics-to-Physiology continuum*. Beginning from the zero-state of potential energy, successive transformations through physical and chemical domains give rise to biological organization, culminating in **Physiology (Ongics)**—the vibrational expression of living order. This framework visually integrates the *OM-to-Genome* hypothesis, illustrating how mathematical symmetry and resonant coherence may underlie both physiological regulation and the broader One Health paradigm.

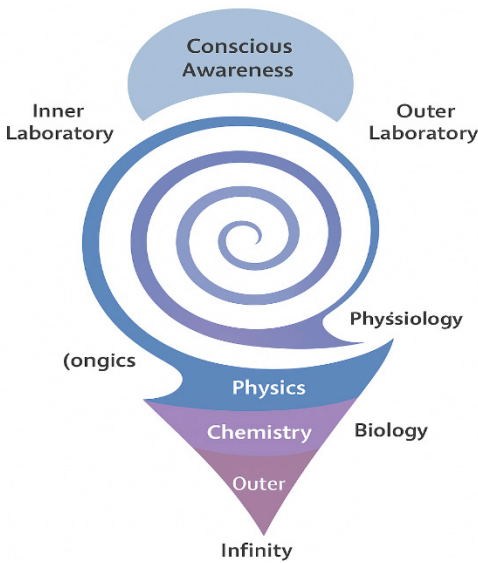


Figure 1. Mathematics-to-Physiology Continuum: From Zero to Infinity through Vibrational Order.

A spiral diagram traces the *Evolution-to-Solution* flow from **Mathematics** through **Physics**, **Chemistry**, **Biology**, **Physiology**, and culminating in **Conscious Awareness**.

Bidirectional arrows link the *Inner* and *Outer* Laboratories. Peripheral rings depict *One Health* expansion—from personal equilibrium to ecological resonance.

Include a **Zero ↔ Infinity** axis along the spiral to symbolise continuity of order.

This schematic illustrates the proposed *OM-to-Genome* continuum linking mathematical symmetry, physical energy, chemical interaction, and biological coherence. Beginning at the “zero-state” of potential energy, ordered transformations propagate through physics and chemistry to culminate in physiology—depicted here as **Physiology (Ongics)**, the integrative field that views living function as a vibrationally organized energy network.

“Ongics” (from *OM* + *-omics*) extends traditional omics sciences to include the study of coherent oscillations that connect sound, neural signalling, and genomic regulation. The continuum represents how resonant processes—whether acoustic, electromagnetic, or molecular—maintain order within the One Health framework, uniting inner and outer laboratories of observation.

Suggested Discipline Tags: Mathematics in Biology; Vagal Physiology; Microbiome–Brain Axis; Bioenergetics; Consciousness Studies

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References

1. Chrousos GP. Stress and disorders of the stress system. *Nat Rev Endocrinol.* 2009; 5(7): 374–381. doi:10.1038/nrendo.2009.106
2. Slavich GM, Irwin MR. From stress to inflammation and disease: The social signal transduction theory of depression. *Psychosom Med.* 2014; 76(2): 150–162. doi:10.1037/a0035302
3. Cryan JF, O’Riordan KJ, Sandler MJ, et al. The microbiota–gut–brain axis. *Physiol Rev.* 2019; 99(4): 1877–2013. doi:10.1152/physrev.00018.2018
4. Noble D. Dance to the tune of life: biological relativity and the philosophy of biology. *Interface Focus.* 2017; 7(5): 20160126. <https://doi.org/10.1017/9781316771488>
5. Hameroff S, Penrose R. Consciousness in the universe: A review of the ‘Orch OR’ theory. *Phys Life Rev.* 2014; 11(1): 39–78. doi:10.1016/j.plrev.2013.08.002

6. Prigogine I, Stengers I. *Order Out of Chaos: Man's New Dialogue with Nature*. New York: Bantam Books; 1984. ISBN 9780553343632
7. Schrödinger E. *What Is Life? The Physical Aspect of the Living Cell*. Cambridge University Press; 1944. doi:10.1017/CBO9781139644129
8. Fröhlich H. Long-range coherence and energy storage in biological systems. *Proc IEEE*. 1968; 56(8): 1345–1357. doi/10.1002/qua.560020505
9. Strogatz SH. *Sync: The Emerging Science of Spontaneous Order*. New York: Hyperion; 2003. ISBN 9780786868445
10. Kaliman P, Alvarez-Lopez MJ, Cosin-Tomas M, et al. Rapid changes in histone deacetylases and inflammatory gene expression in expert meditators. *Psychoneuroendocrinology*. 2014; 40: 96–107. doi:10.1016/j.psyneuen.2013.11.004
11. Das De T, Sharma P, Tevatiya S, Chauhan C, Kumari S, Yadav P, Singla D, Srivastava V, Rani J, Hasija Y, Pandey KC, Kajla M, Dixit R. Bidirectional Microbiome-Gut-Brain-Axis Communication Influences Metabolic Switch-Associated Responses in the Mosquito *Anopheles culicifacies*. *Cells*. 2022 May 31;11(11):1798. doi: 10.3390/cells11111798. PMID: 35681493; PMCID: PMC9180301.
12. Patel V, Saxena S, Frankish H, Boyce N. Sustainable development and global mental health—a Lancet Commission. *Lancet*. 2016;387(10024):1143–1145. doi:10.1016/S0140-6736(16)00208-7.
13. Dixit R. Evolution to Solution: Translating mosquito molecular physiology beyond vector control towards “Translating physiology to philosophy: research for peace.” *Science Factors* (Expert Opinion). 2025 Oct; (October issue): 18. Available from: https://www.rfcsr.org/wp-content/uploads/2025/10/October-Science-Factors_2025.pdf
14. Kalyani BG, Vasudevan S, Goswami U, et al. Neurohemodynamic correlates of ‘OM’ chanting: A pilot fMRI study. *Int J Yoga*. 2011; 4(1): 10–13. doi: 10.4103/0973-6131.78171
15. Bonaz B, Bazinet RP, Pellissier S.. The vagus nerve at the interface of the microbiota–gut–brain axis. *Front Neurosci*. 2018; Published 2018 Feb 7. doi:10.3389/fnins.2018.00049.
16. Tracey KJ. The inflammatory reflex. *Nature*. 2002; 420(6917): 853–859. doi:10.1038/nature01321
17. Doerr JM, Juenemann M, Hakel L, Schmidt L, Menzler K, Krause K, Linka L, Skoluda N, Nater UM, Knake S. Effect of transcutaneous vagus nerve stimulation on stress-reactive neuroendocrine measures in a sample of persons with temporal lobe epilepsy. *Epilepsia Open*. 2023 Sep;8(3):1013–1020. doi: 10.1002/epi4.12774.
18. Saini V, Rohilla P, Srivastava V, et al. Sensory appendage protein triggers alarm to pyrethroid in Indian malarial vector *Anopheles culicifacies*. *PLoS One*. 2025;20(10):e0333483. doi:10.1371/journal.pone.0333483

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