The Science Behind coMra Technology

coMra®

Acknowledgements

This e-book is a creative collaboration between **Radiant Life Technologies** and **Science to Sage magazine**, designed to present to a wider audience some of the groundbreaking scientific principles that are incorporated in coMra technology. We especially thank Dr Arzhan Surazakov PhD, the author of "coMra therapy: healing with coherence", [*1*] for providing scientific background and Karen Elkins, the editor of "Science to Sage", [*2*] for editorial work and graphical illustrations of the key discoveries.

The coMra biosupport team

Contents

The Numbers, the Discovery, and the Science Behind coMra Biosupport 4

The Question Allopathic Medicine has not yet Answered 6

Coherence and Functional Reserve: The Hidden Architecture of Health 8

The Numbers Behind the Science 10

Energy: The 200–300% Factor 11

What is Quantum Coherence? 13

Synergy: Why 1+1+1+1 is Greater Than 4 13

Metabolism: the 2.5-Fold Ultrasound Effect 14

Bioenergetics: The Foundation of Immune Function and Recovery 14

Why Combinations Work: Synergy, not Addition 15

Clinical Evidence: From Research Ward to the Home 16

Inside the Device: Four Radiances, One Coherent Vortex 18

The Language of Color: A Regenerative Message 19

What Happens After Treatment? 20

The Deeper Vision: Self-Sufficiency 23

Footnotes 24

Resources 24

The Numbers, the Discovery, and the Science Behind coMra Biosupport

In 1995, a small group of like-minded individuals set out on an unusual quest. Their vision was not to build a pharmaceutical company or a medical device firm in the conventional sense. It was something older and, in a way, more radical: ***to find ways to help people help themselves***. They sought technologies that would benefit men and women in claiming their own power — becoming more holistic, more self-sufficient, freer.

Fourteen years of research, development, and investigation followed. In July 2009, Théun Mares — philosopher, author, and the visionary force behind this effort — co-founded **Radiant Life Technologies** and introduced coMra biosupport to the world. The central concept was precise from the start: ***support the body's innate ability to heal itself, by raising the efficiency of key cellular functions using low-intensity coherent multiple radiances***.

The name encodes the science. **coMra** stands for ***coherence*** expressed through ***Modulation*** of different ***radiances***. But for its founders, the word carries a deeper resonance: the renewal of life ("**co**" or the Son) emerging within the body ("**M**" or the Mother) in response to a healing stimulus ("**ra**" or the Father). Science and symbol, woven deliberately together.

The first coMra device — *the coMra Delta* — combined four physical radiances in a single coherent biosupportive stream: an infrared laser, a magnetic field, ultrasound transducers, and color LEDs in three wavelengths.

> **Science is our ability to enhance the quality of all of life, by uncovering that knowledge which everyone can use to achieve their freedom through the medium of technology.**
>
> *Théun Mares, founder of Radiant Life Technologies*

By 2024, the fourth-generation coMra Pro 905 had reached users in countries around the world, carrying over fifteen years of refinement into a portable, handheld unit.

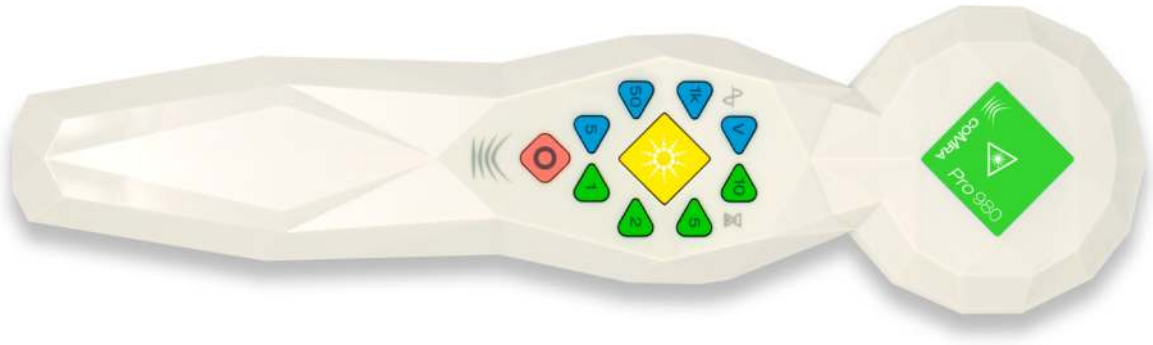
The Question Allopathic Medicine has not yet Answered

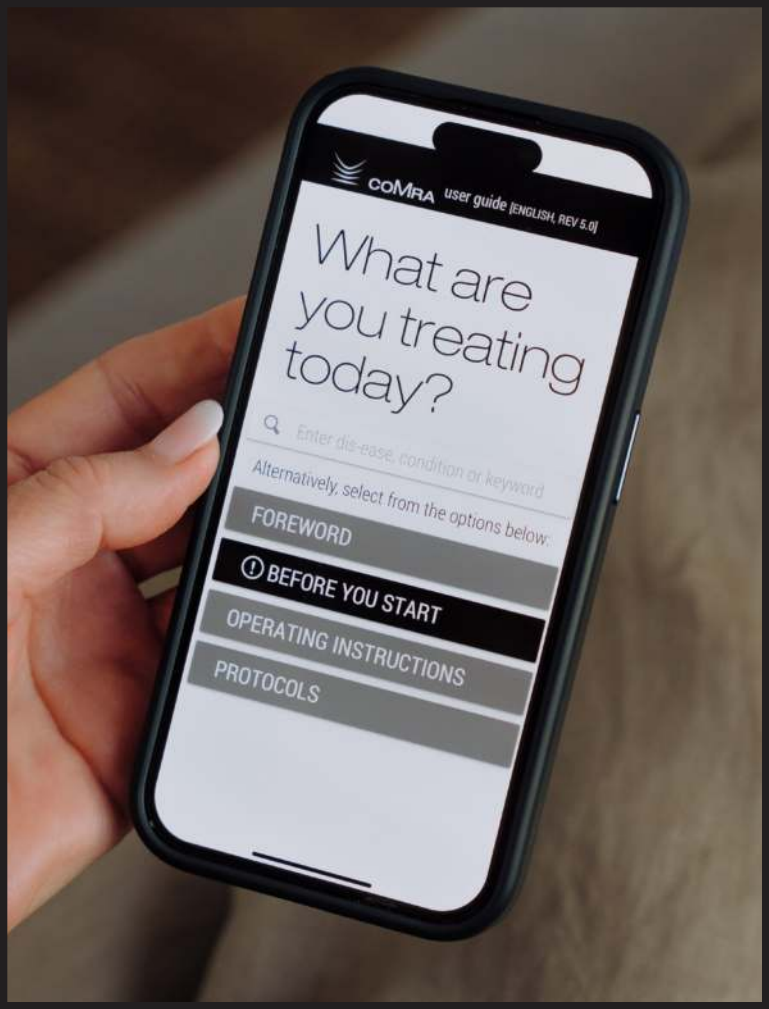
To understand what coMra biosupport is, you first have to understand the problem it was built to solve — a problem that sits at the center of modern medicine, rarely named directly but felt everywhere in clinical practice.

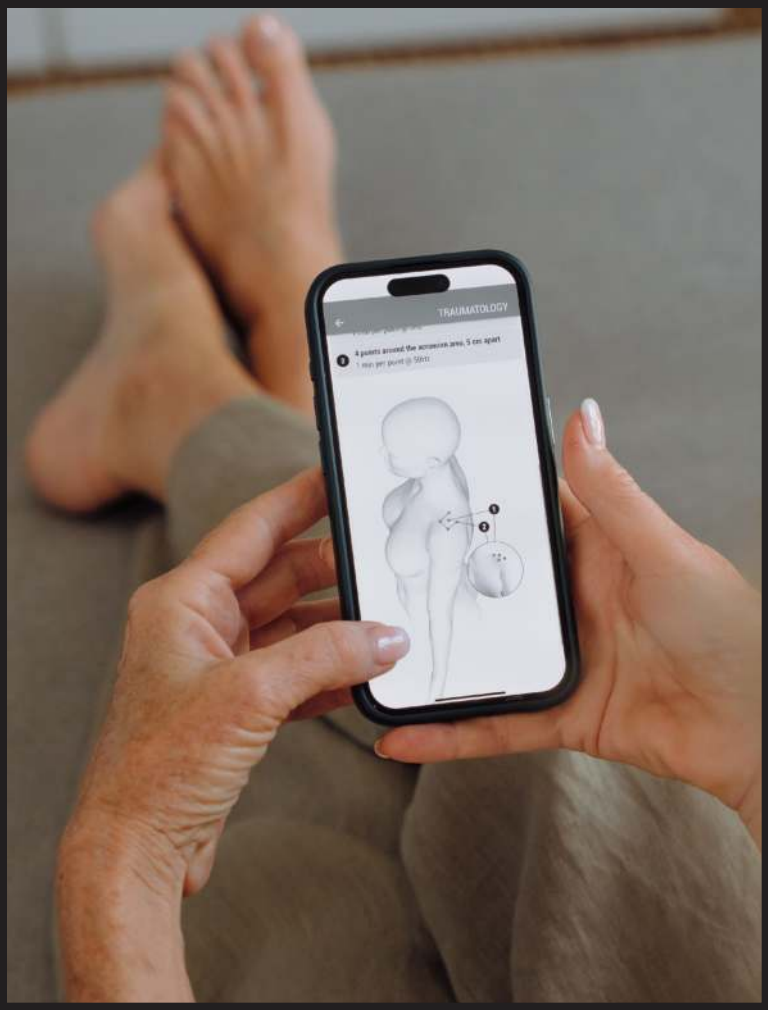
Allopathic medicine is extraordinarily good at preventing death and managing disease. It can suppress inflammation, control blood pressure, slow the progression of organ failure, block pain, kill pathogens. These are real achievements. But managing a disease is not the same as repairing the damage it has done. In chronic heart failure, medication may reduce the workload on the heart — but the damaged cells of the heart muscle remain damaged. In osteoarthritis, anti-inflammatories may quiet the pain — but the structural breakdown of cartilage continues. By 2014, 60% of adults in the United States had at least one chronic condition; 42% had more than one.

The central unresolved challenge, as Dr. Surazakov frames it, is this: how do we repair the injury that cells and organs have already sustained as a result of stress, disease or trauma? Despite colossal research efforts — including some 2,500 clinical trials in stem cell and genetic regenerative medicine — routine restoration of tissue after trauma or disease remains beyond reach through these methods.

coMra biosupport approaches this challenge from a fundamentally different direction. Rather than attempting to control the regenerative process from outside — injecting stem cells, delivering growth factors, genetically engineering pathways — it asks: *what does a cell need to do this itself? And can we provide support to a cell non-invasively?*




coMRA user guide [ENGLISH, REV 5.0]
What are you treating today?
Enter dis-ease, condition or keyword
Alternatively, select from the options below:
FOREWORD
BEFORE YOU START
OPERATING INSTRUCTIONS
PROTOCOLS


TRAUMATOLOGY

Coherence and Functional Reserve: The Hidden Architecture of Health

The key concept that bridges health and technology is coherence. The fundamental ability of an organism to organize itself as one functioning whole depends on how coherently it weaves together disjointed "quants" of energy, matter and signals from the environment in response to the unifying intent of a being to maintain a particular form. In a state of high coherence a life form is able to function with the least amount of effort, whereas low coherence leads to inefficiency, exhaustion, depletion and eventual breakdown.

From a biological point of view, a state of coherence manifests as functional reserve — the extent to which the function of a cell, organ, or whole organism can be intensified in response to an increased load. It is not energy stored passively. It is the living capacity to rise to a challenge.

We experience high functional reserve when we do not get sick even in demanding situations. An elite cyclist can sustain a five-fold increase in metabolic rate during a race without ending up in hospital. A person with low functional reserve, by contrast, may become severely ill after a five-minute walk. Their compensatory systems are already fully committed to basic survival; there is nothing left to mount a healing response.

There are four closely interrelated aspects of functional reserve that coMra biosupport addresses:	**Energy functional reserve** — how much can energy supply be increased to meet basal metabolic needs plus the extra cost of immune activation, repair, and **regeneration.**	**Structural functional reserve** — the capacity to activate molecular transport and synthesize structural and enzyme proteins to rebuild cellular and tissue architecture.
	Regulatory functional reserve — the dynamic ability of cells, organs, and organ systems to coordinate their activity optimally in response to stress.	**Psychological functional reserve** — the intent, knowledge, motivation, and self-sufficiency of the person which directly influence physiological healing capacity.

When stress, disease or trauma strikes, these four reserves deplete together. The cell's intelligence — its inherent ability to self repair — is fully intact. But it cannot act on what it knows because it lacks the resources. coMra biosupport addresses this depletion directly, restoring the functional reserves that allow cellular intelligence to resume its work.

The Numbers Behind the Science

coMra biosupport is grounded in a substantial body of experimental and clinical evidence accumulated over decades of research in biophysics, photomedicine, and regenerative medicine. The numbers that emerge from this research are striking:

200–300%
increase in ATP synthesis into infrared laser + magnetic field

3,500+
research reports on laser therapy in the English language alone by 2014

200+
individual treatment protocols in the coMra User Guide

40 Yrs+
of MIL-Therapy (magnetic-infrared laser) clinical experience

760%
ATP increase in heart cells 4hrs after myocardial infarction (laser treated vs untreated)

90%+
accuracy predicting COVID-19 severity from bioenergetic biomarkers, 10+ days ahead

3×
increase in neutrophil functional reserve in pneumonia patients (laser + medication vs medication)

2.5×
improvement in blood-clot dissolution when ultrasound added to standard therapy

Energy: The 200–300% Factor

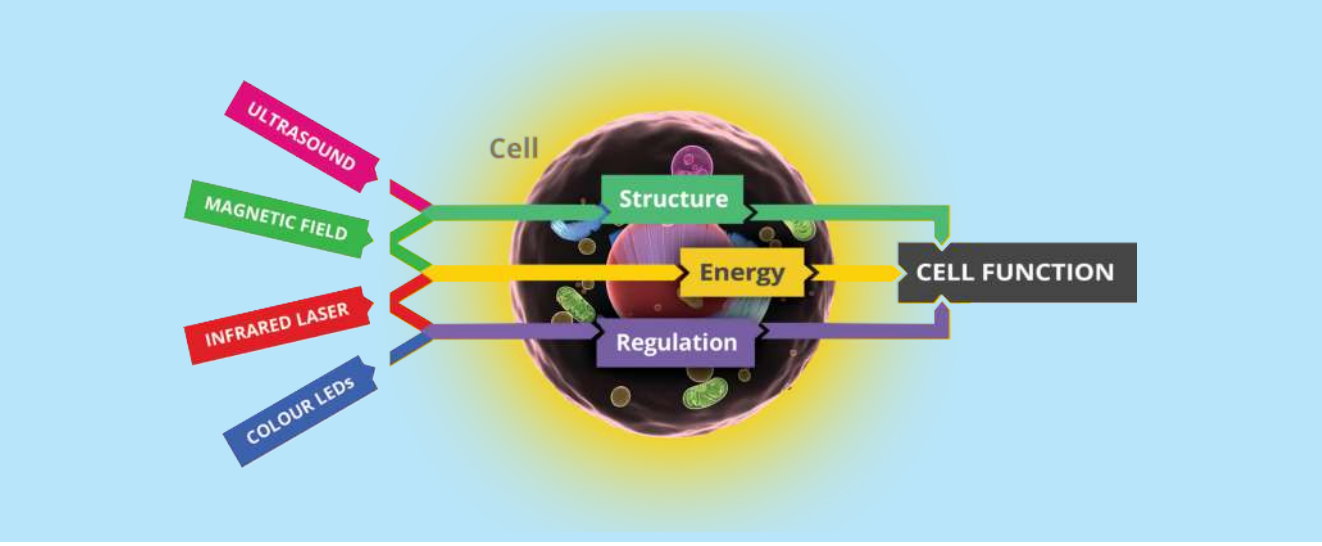
The most fundamental number in coMra science is the increase in ATP synthesis achievable through the combined action of low-intensity near-infrared laser and a weak magnetic field.

Multiple independent experimental studies, across a wide range of cell types and conditions, have confirmed increases of 200–300% in ATP production.

Some individual results are even more dramatic. Studies in the appendix of Dr. Surazakov's book ***coMra Therapy: Healing with Coherence*** [*1*] record: a 170% increase of ATP synthesis in rat liver mitochondria; 197% in normal human neural progenitor cells; 122% in lymphocytes; 145% in human mast cells; 307% in muscle cells of mice treated before physical exercise; and a remarkable 760% increase in cardiomyocytes of laser-treated animals in the ischemic zone four hours after myocardial infarction.

The mechanism behind these numbers is ***quantum coherence***. In the conventional nucleophilic channel of ATP synthesis, the process is thermodynamically inefficient — only one ATP molecule is produced for every twelve ADP-phosphate pairs that enter the catalytic site. The remaining eleven simply revert. But when infrared laser photo-excites the reactant molecules into a radical pair state, and a magnetic field then stabilizes that pair by flipping the electron spin from singlet to triplet — preventing the back-reaction — an additional, high-efficiency channel opens that is two to four times more productive. This radical pair mechanism, first proposed by Buchachenko and colleagues, also explains how birds navigate using the Earth's geomagnetic field — a reminder that quantum effects are not too delicate for the "warm, wet and noisy" environment of a living cell.

Crucially, in normal physiological conditions — when a cell does not need extra ATP — this enhancement does not force overproduction. Energy regulation feedback loops remain fully in control. The extra efficiency becomes available under conditions of stress: hypoxia, damaged mitochondria, toxicity, elevated functional load. It is precisely then that the cell draws on the expanded capacity, resolves its energy deficit, and resumes self-repair.



coMira
Pro 980
1K
V
10
50
5
2
1
O

coMira
Pro 980

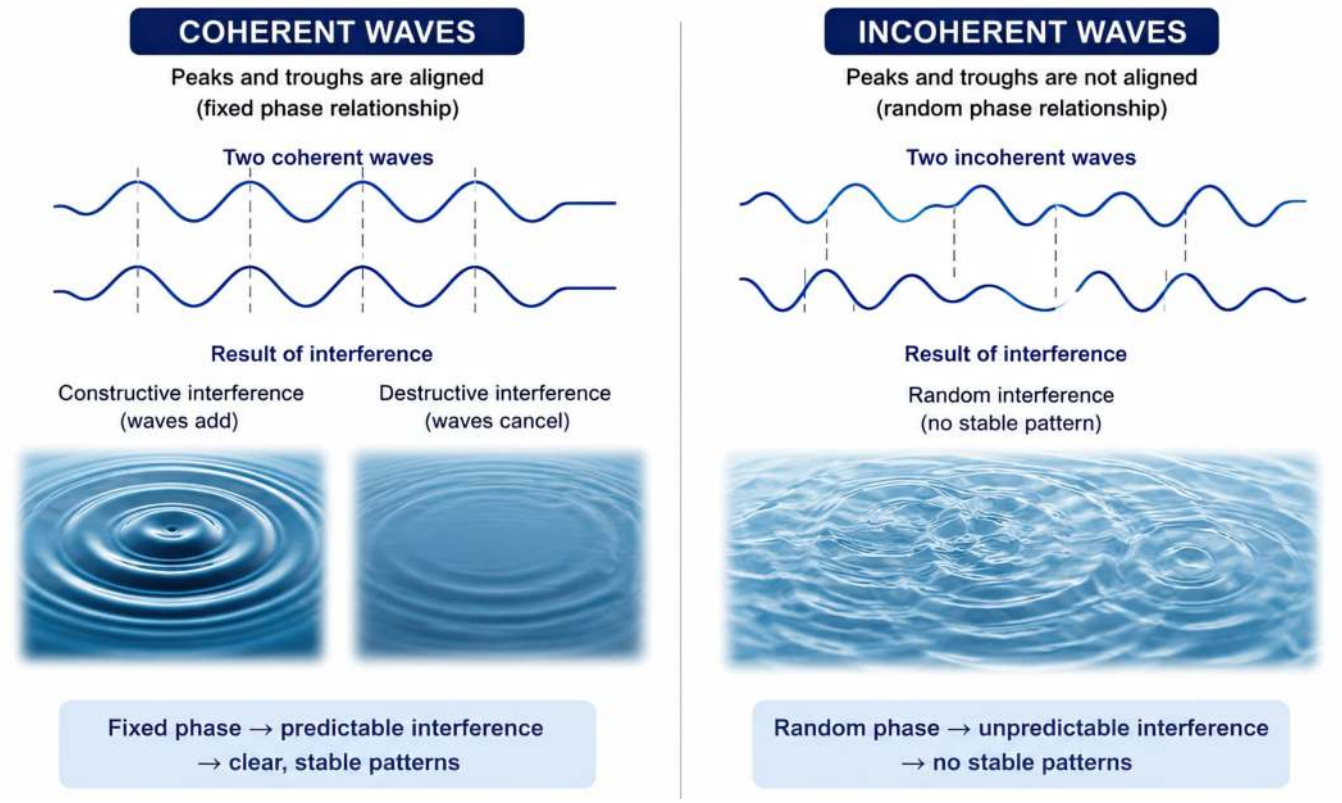
coMira
Pro 980
V
10
1K
5
50
2
O

What is Quantum Coherence?

Think of waves in water: **Coherent waves (like from a laser) have their peaks and troughs perfectly aligned — they can constructively or destructively interfere to create clear patterns.**

Incoherent waves (like random ripples) have random phases, so they just average out without clear interference.

In quantum mechanics, particles/waves can be in multiple states at once (superposition). Coherence is what keeps the "wave-like" phase information intact so interference can occur.



Synergy: Why 1+1+1+1 is Greater Than 4

A critical insight in coMra's design is that the four radiances are not simply added together — they create an emergent effect that cannot be predicted from their individual contributions. This synergy is not theoretical; it has been measured.

In an experiment by Friedmann et al. (2009), the combined application of infrared laser and magnetic field produced a 22% change in electron paramagnetic resonance (EPR) signals in mitochondria — directly reflecting the rate of ATP synthesis. When the same radiances were applied individually, they produced no measurable EPR signal at all. In the absence of magnetic field, it required a ten-fold increase in light intensity to achieve an 18% change. The combination achieved more, at far lower individual intensities.

This synergistic relationship is precisely why coMra devices can operate at intensities lower than those used in conventional mono-therapies — laser therapy, magneto-therapy, color therapy, ultrasound therapy — while achieving greater bio-supportive effect. It is also why there is no risk of overdose: the low individual intensities cannot damage tissue structure or disrupt cellular regulation. There are no absolute contraindications.

Metabolism: the 2.5-Fold Ultrasound Effect

Energy alone cannot rebuild damaged tissue. The cell also needs to move materials — delivering substrate molecules to thousands of enzymes, removing products, and transporting structural building blocks. In injured or diseased tissue, this molecular traffic becomes sluggish. The 40 kHz ultrasound component of coMra addresses this directly.

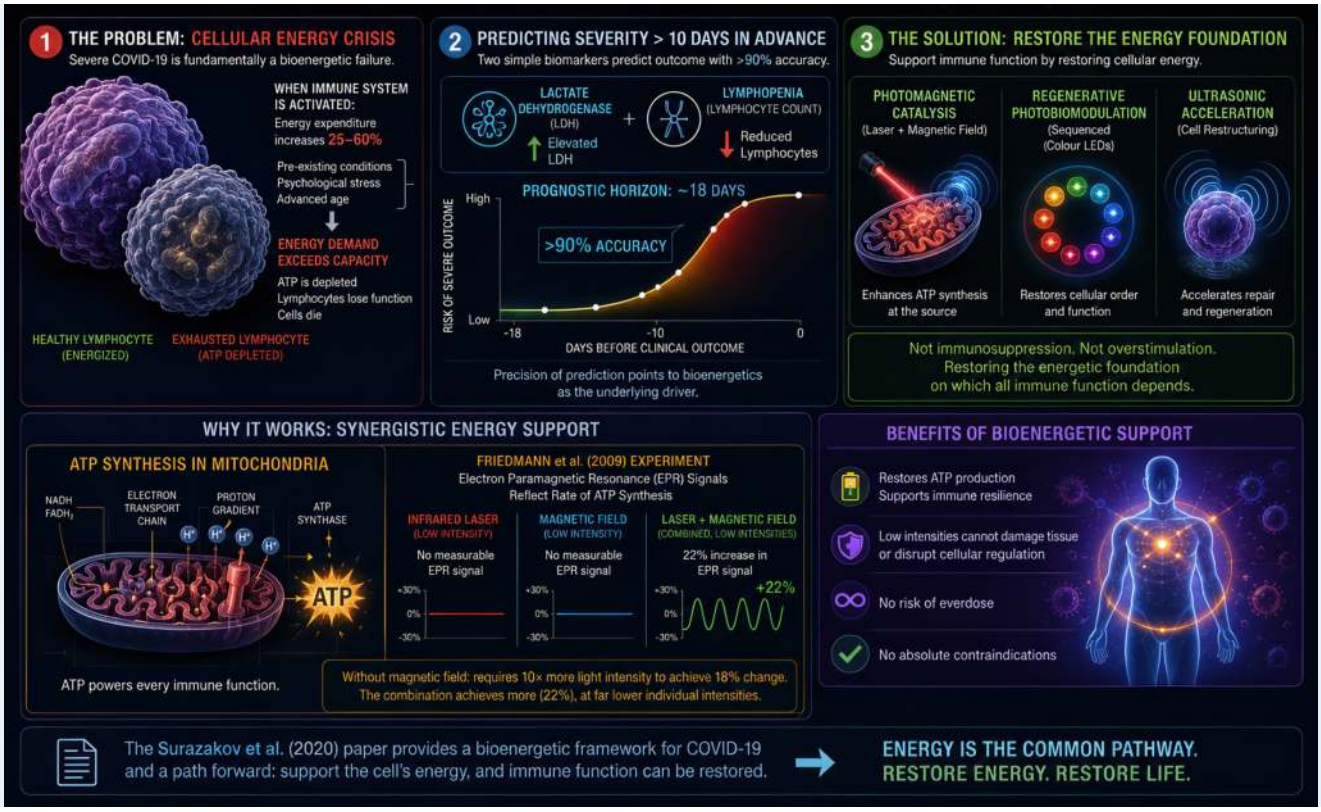
One illustrative experiment: tissue plasminogen activator (tPA), a standard medication for dissolving blood clots, achieved 37% fibrinolysis over two hours in vitro. Adding low-intensity 40kHz ultrasound increased this to 93% — a 2.5-fold improvement. Ultrasound alone, without tPA, showed minimal fibrinolysis. The effect was entirely due to the enhanced delivery of the enzyme to its substrate, not to any direct mechanical disruption of the clot structure. Ladole et al. separately demonstrated a 3.6-fold increase in enzyme activity using low-intensity ultrasound.

Bioenergetics: The Foundation of Immune Function and Recovery

In 2020, Dr. Surazakov and colleagues published a peer-reviewed theoretical paper in the ***Journal of Photochemistry & Photobiology, B: Biology*** [3] that applied this bioenergetic framework to COVID-19. Their hypothesis: the progressive exhaustion and death of lymphocytes observed in severe COVID-19 is fundamentally a cellular energy crisis. When the immune system is activated, energy expenditure can increase by 25–60% above baseline (from mild inflammation to sepsis). In individuals with pre-existing chronic conditions, psychological stress, or advanced age — all of which reduce functional reserve — this demand cannot be met. The immune cells exhaust their ATP, lose function, and die.

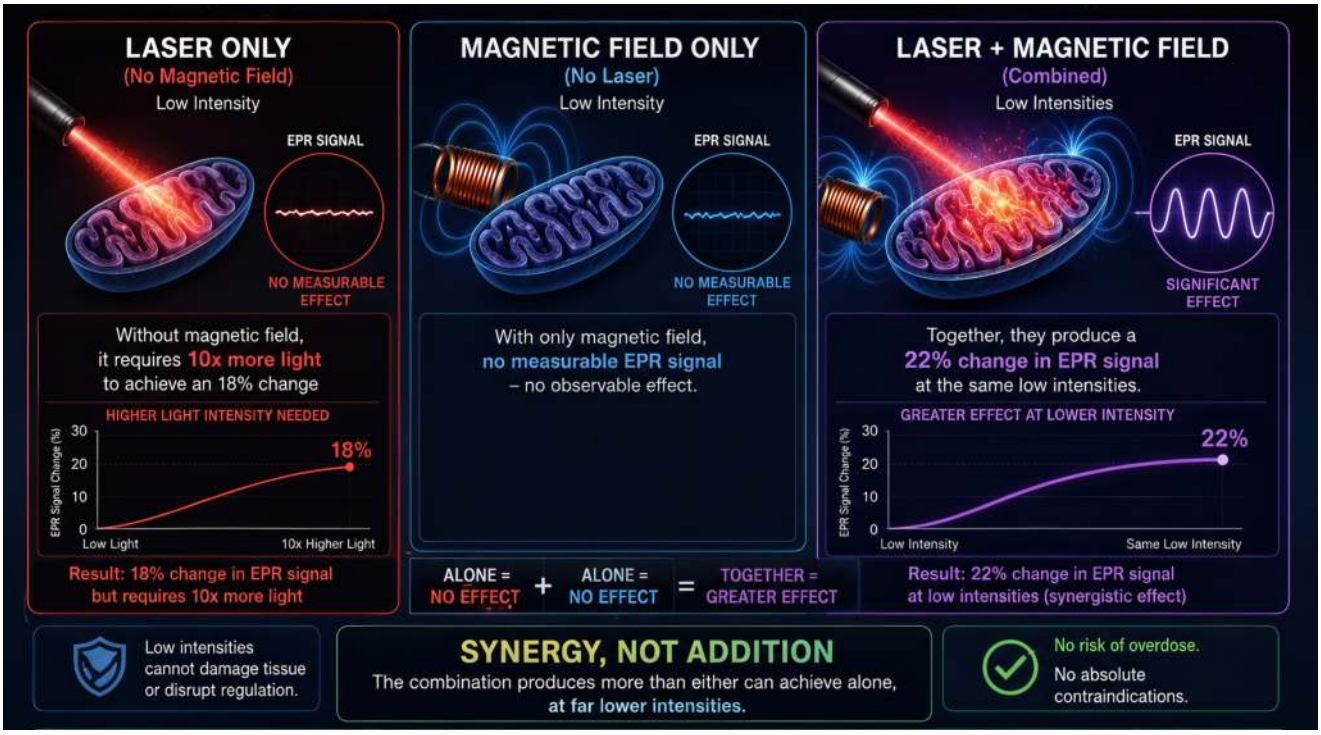
Using only two biomarkers — lactic dehydrogenase levels and lymphopenia — it is possible, the paper notes, to predict the severity and outcome of COVID-19 more than ten days in advance with over 90% accuracy. The prognostic horizon is estimated at 18 days. This precision points directly to bioenergetics as the underlying driver.

The paper proposed that photomagnetic catalysis of ATP synthesis, regenerative photobiomodulation via sequenced color LEDs, and ultrasonic acceleration of cell restructuring could support immune function not by stimulating or suppressing specific immune pathways, but by restoring the energetic foundation on which all immune function depends:



Why Combinations Work: Synergy, not Addition

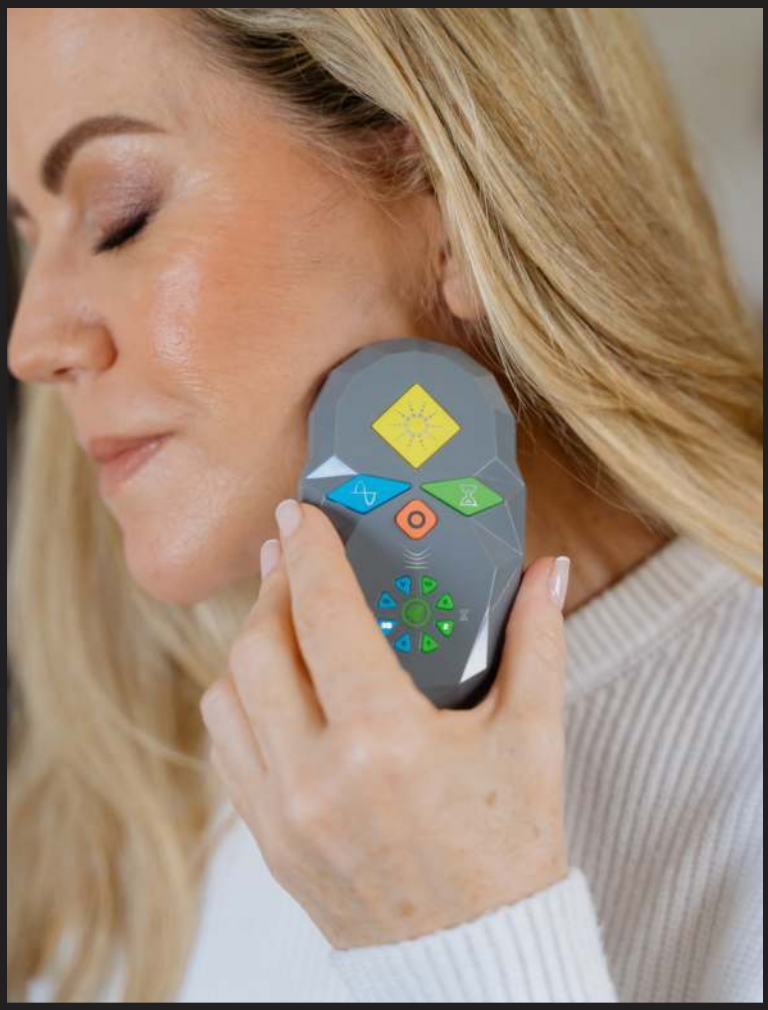
Laser plus magnetic field produce a greater biological effect at lower intensities than either alone:



Clinical Evidence: From Research Ward to the Home

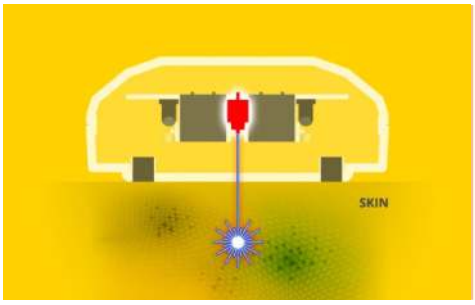
In clinical application, the effects of MIL-Therapy (the direct predecessor combining infrared laser and magnetic field) and coMra biosupport have been documented across hundreds of conditions:

1	Up to 3-fold increase in suppressed neutrophil functional reserve in patients with community-acquired pneumonia, after a 7-day course of laser + medication versus medication alone.
2	Significant improvement in left ventricular ejection fraction in patients with dilated cardiomyopathy — a 12-month study of 100 patients. The laser + exercise + medication group showed sustained improvement; the medication-only group showed no significant positive change and worsened at 9 and 12 months.
3	Faster restoration of liver function in patients with severe obstructive jaundice of pancreatic origin when laser blood irradiation was added to standard therapy.
4	Increased T-lymphocyte proliferation and IgA/IgG antibody levels in pediatric patients with secondary immunodeficiency due to cystic fibrosis.
5	Significant reduction of cytokinemia and faster elimination of clinical symptoms in patients with infiltrative pulmonary tuberculosis.

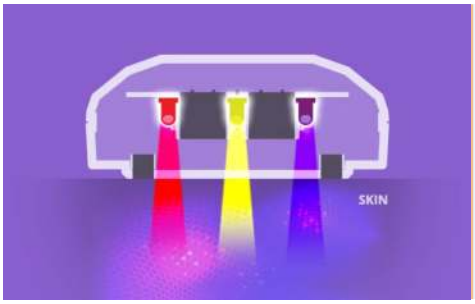


Inside the Device: Four Radiances, One Coherent Vortex

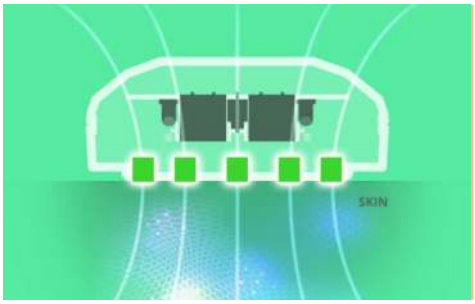
The coMra Delta (the original device) and its successors synthesize four physical radiances into what Dr. Surazakov describes as a ***coherent vortex*** — a unified life-supportive stream in which each component amplifies the others:



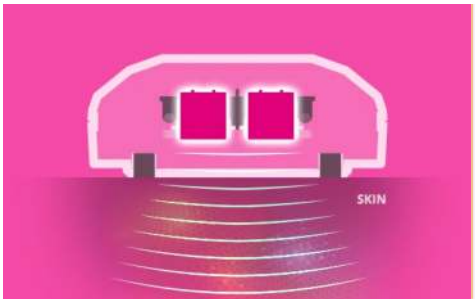
Infrared laser 905nm or 980nm wavelength, continuous wave with on/off modulation at 5, 50, 1000Hz and variable frequencies. Targets ATP synthesis via quantum coherence.
The effective depth of penetration varies with modulation: 5Hz is most suitable for deeper tissues and organs; 50Hz is best for tissues just under the skin; 1000Hz acts at skin surface.



Color LEDs Nine LEDs in three monochromatic wavelengths: red 650nm (stimulatory/proinflammatory), indigo-violet 420nm (inhibitory/anti-inflammatory), 570nm (balancing/remodeling). Applied in a precise regenerative or rejuvenative sequence that mirrors the natural three-stage rhythm of biological self-repair.



Magnetic field Nine permanent magnets form a toroidal (doughnut-shaped) field focused at the application site. Stabilizes radical pairs to enhance ATP synthesis and sustains quantum coherence conditions.



Ultrasound 40kHz frequency, four transducers.
Enhances molecular transport, enzyme efficiency, and cytoskeleton restructuring — the mechanical dimension of cellular repair.

The geometric arrangement of emitters is not incidental. The infrared laser diode sits at the center, surrounded by four ultrasound transducers. The color LEDs circle the central emitters in a ring, illuminating

the entire treatment site. Permanent magnets are interspersed among the LEDs, creating the toroidal magnetic field. All radiances act on the same volume of tissue, ensuring that each enhances the effects of the others rather than operating in isolation.

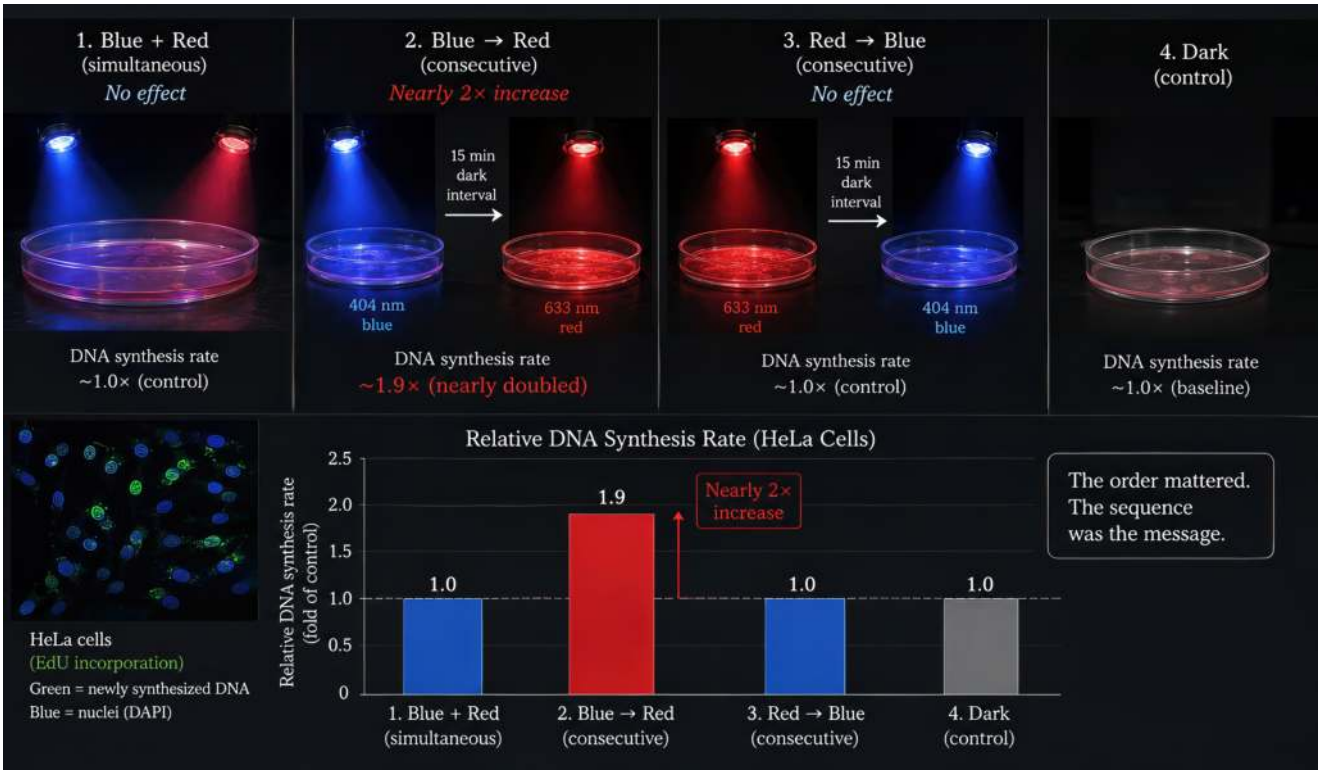
The modulation of the laser at harmonic frequencies — with all other radiances (except the permanent magnetic field) modulated in synchrony —creates the coherent temporal pattern that is the hallmark of the coMra vortex. It is this temporal coherence, combined with spatial coherence of the emitters, that produces the synergistic emergent effect not reducible to the sum of the individual radiances.

The Language of Color: A Regenerative Message

Of the four radiances, perhaps the most surprising is the role of sequenced color. The color LEDs are not coherent in themselves — they're monochromatic but not laser-quality. Their power lies in their sequence.

In 1985, Karu reported experiments on HeLa cells exposed to different combinations of monochromatic light. Concurrent illumination with red (633nm) and blue (404nm) light produced no effect on DNA synthesis rates. But consecutive illumination — first blue, then red — nearly doubled the DNA synthesis rate. The reverse sequence did not produce that effect. The order mattered. ***The sequence was the message***.

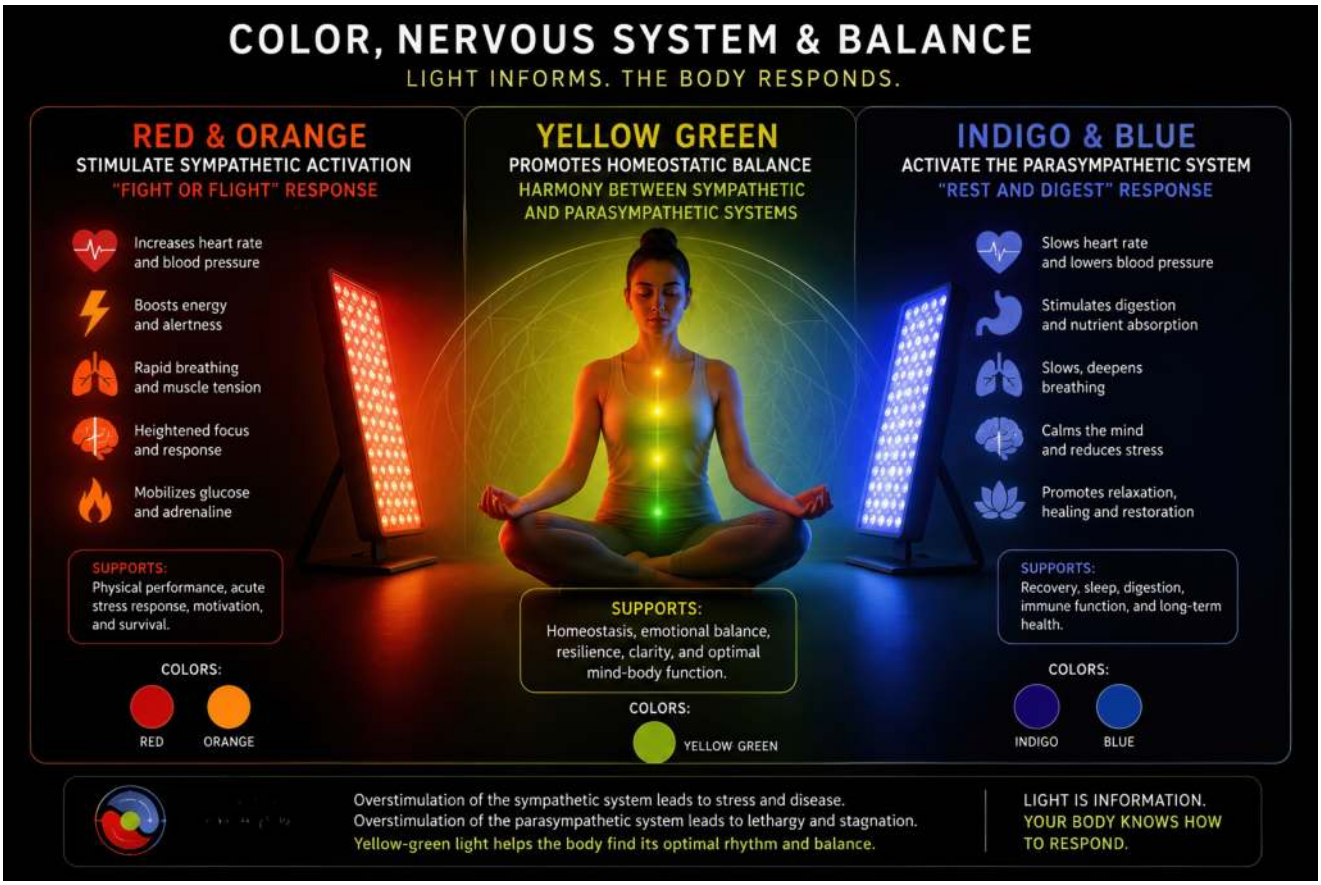
coMra biosupport introduced two specific color sequences, each corresponding to a different intent:



The physiological rationale draws on centuries of color medicine, from Avicenna's color alcove in 11th-century Persia to Harry Riley Spitler's syntonic optometry in the 1920s, which documented therapeutic outcomes in over 3,000 patients.

Red and **orange** stimulate sympathetic activation (the "fight or flight" response); activate the parasympathetic system ("rest and digest") promotes homeostatic balance between the two.

The sequence creates what Dr. Surazakov calls a regenerative bio-modulation signal — a biologically universal message that spans individual cell regulation and the whole organism.



What Happens After Treatment?

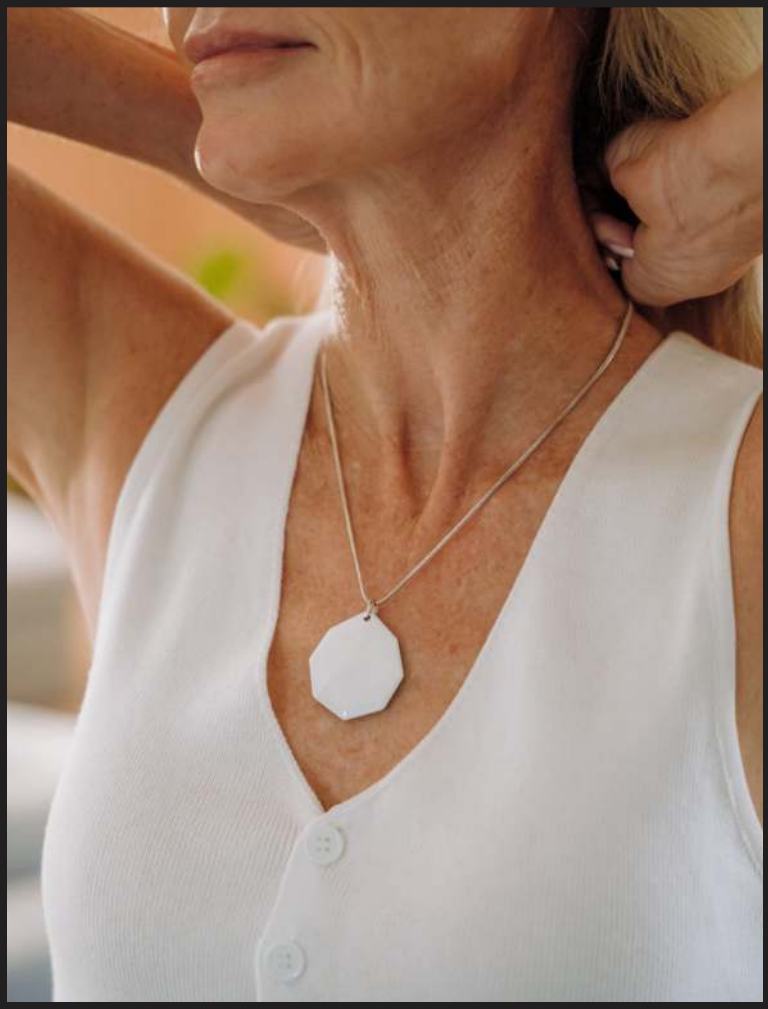
The immediate biophysical effects of coMra biosupport are not disease-dependent. Low-intensity coherent radiances act on universal cellular mechanisms: enhancing ATP synthesis, accelerating molecular transport, delivering regenerative signals. But the physiological consequences that follow are entirely specific to the current state of each individual organism.

Once the functional reserve of treated tissue is restored to sufficient capacity, the organism itself — not the coMra device — intelligently initiates and carries out condition-specific self-repair. The body assesses what it needs, activates the appropriate cascades of biochemical and physiological change, and proceeds to heal in the way it has evolved to heal. coMra provides the conditions; cellular intelligence does the work.

In clinical experience, the observable sequence of recovery tends to follow a recognizable pattern. First comes relief of acute pain and an increased sense of wellbeing — the immediate result of restored cellular energy balance. Then tissue-specific function resumes: digestion improves, sleep restores, immune markers normalize, organ function recovers. Over weeks and months of continued treatment, structural regeneration proceeds — damaged tissue gradually replaced by healthy functional tissue.

Pain, understood through this framework, is not a signal to be blocked but information to be heard and addressed. Dr. Surazakov draws on the Liedtke model: acute pain is a warning system for intracellular energy deficit. When a cell is injured, failing ATP pumps shift the ion composition of the surrounding fluid, altering neuronal membrane potential and generating pain signals. Restore the energy balance, and the neurons normalize their excitability. The pain resolves not because the signal was blocked, but because the crisis that triggered it has passed. coMra users frequently report a sensation of lightness and even euphoria — what Liedtke predicted as the physiological opposite of pain, an energetic surplus expressing itself as positive perception.

The biophysical effects of coMra biosupport on living tissue are NOT disease dependent, but they act to enable intelligent biological responses to these effects in ways that are highly specific and most adequate given the current state of the organism.



The Deeper Vision: Self-Sufficiency

It would be possible to present coMra biosupport purely as a medical technology — and the science alone is substantial enough to warrant that framing. But to do so would be to miss what its founders consider its most important dimension.

The overarching intent behind coMra biosupport, stated explicitly in its foundational documents, is to support people in becoming ever more self-sufficient. Not dependent on a device. Not reliant on a practitioner. But genuinely empowered — knowledgeable about their own body, skilled in their own self-care, actively engaged in their own healing.

coMra biosupport can be equally applied to an aging family dog, an overexerted race horse, an ill cow or a sickly flower. All of life flourishes and regenerates in a condition of higher coherence, harmony and care.

This is why the coMra devices were designed to be used at home. Why the user guide contains more than 200 protocols, written for non-specialists. Why the coMra user guide app puts clinical-grade guidance in a user's pocket. The technology is, as one of the company's own materials puts it, ***"a means to empower the person who needs healing support to focus his or her intent on healing and quality of life, to learn about practical skills of self-care and to take concrete daily actions in that direction."***.

The Swedish proverb that appears in coMra's literature says it with characteristic economy:

> **The best place to find a helping hand is at the end of your own arm.**

For a technology rooted in quantum physics and cellular bioenergetics, this is a surprisingly human conclusion. And perhaps not surprising at all — because the science of coMra is, at its core, the science of life's own intelligence. To support that intelligence, rather than replace it, is the most coherent thing a healing technology can do.

Footnotes

[1] **coMra therapy: healing with coherence** by Dr Arzhan Surazokov, PhD
https://comra-therapy.com/resources/#ebooks

[2] **Science to Sage magazine** by Karen Elkins
https://sciencetosagemagazine.com/

[3] Surazakov A, Klassen A, Gizinger O. **The bioenergetics of COVID-19 immunopathology and the therapeutic potential of biophysical radiances.** *Journal of Photochemistry and Photobiology B: Biology.* 2020:112083. https://pmc.ncbi.nlm.nih.gov/articles/PMC7659653/

Resources

coMra devices
https://comra-biosupport.com/

coMra user guides
https://comra-therapy.com/comra-user-guides/

coMra social network
Instagram: https://instagram.com/healing_with_coherence/
YouTube: https://youtube.com/c/coMraTherapy

Radiant Life Technologies
https://radiant-life-technologies.com/

coMra®

Life-changing solutions by
Radiant Life Technologies

© Radiant Life Technologies LTD. All rights reserved. coMra is a registered trademark of Radiant Life Technologies LTD.