

Questions?

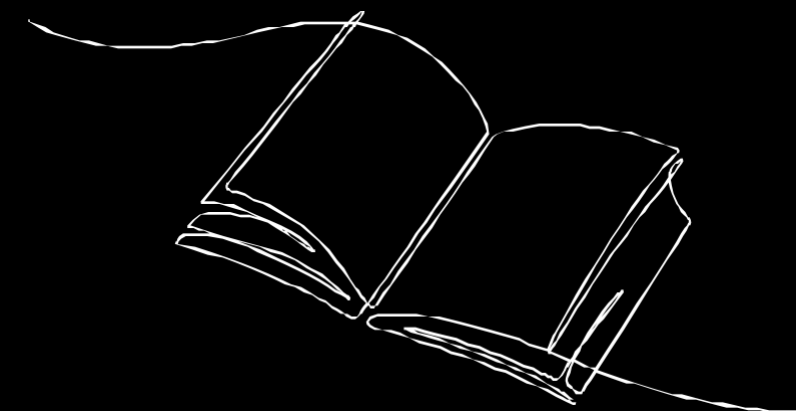
info@luminovavita.com
Phone: +971 4 527 6878

Web shop

www.luminovavita.com

EndoLight® Band

Foundational science and first studies



ABOUT:



Leading medical device manufacturer
in the field of Low-Level Laser Therapy

Main location:
Sohnreistr. 4
37697 Lauenförde
Germany

- **Founded in 2003** after several years of research and development in the field of medical laser therapy
- **With financial aid from the German government and the European Union** Dr. Michael Weber developed **one of the world's first multichannel laser systems** for external pain management (Weberneedle® Compact) in 2004
- **12 years of clinical experience** with data from more than 1,500 practices worldwide
- With the aim of building a worldwide distribution, research and education network the company founded the **International Society for Medical Laser Applications (ISLA e.V.)** in 2006
- The company is in **collaboration with numerous universities worldwide** in research and development to ensure **high standards and innovative product development**

Dr. med. Dipl. chem. Michael Weber



Dr. Weber has been practicing Medicine in Germany for more than 30 years. Today he heads three medical centers for general and internal medicine, pain therapy, naturopathic medicine (acupuncture) and photodynamic tumor therapy.

Besides his medical degrees, Dr. Weber holds a diploma in biochemistry, which made a significant contribution to his research and development of the new laser technology.

As president of ISLA and co-editor of several international medical journals, his main focus is on researching and publicizing the new procedures.

Dr. Weber is the developer of the patented Weberneedle® technology, which allows application of highly focused and efficient lasers of different wavelengths for the patients' health.

Scientific collaborations

The focus of Dr. Weber's work is on evidence-based medicine. This has resulted in the following collaborations:



The partner of Weber Medical: W Medical Systems GmbH

W Medical Systems GmbH was established in 2015 and is a partner of weber medical GmbH.

This partnership enables for a close collaboration with a large network of physicians from all over the world.

In order to further develop and optimize therapies, the latest scientific findings and innovations drive the development of all new products.

The EndoLight® is the latest result of many years of research and experience in laser therapy and emerges from the collaboration of the two companies.



Lluminova Vita in cooperation with W Medical Systems will be happy to answer any questions you may have about the EndoLight® or to provide you with individual guidance.

Customer service

+971 4 527 6878

Email

info@lluminovavita.com

Additional information and web shop

www.lluminovavita.com

ABOUT LOW-LEVEL LASER THERAPY (LLLT)

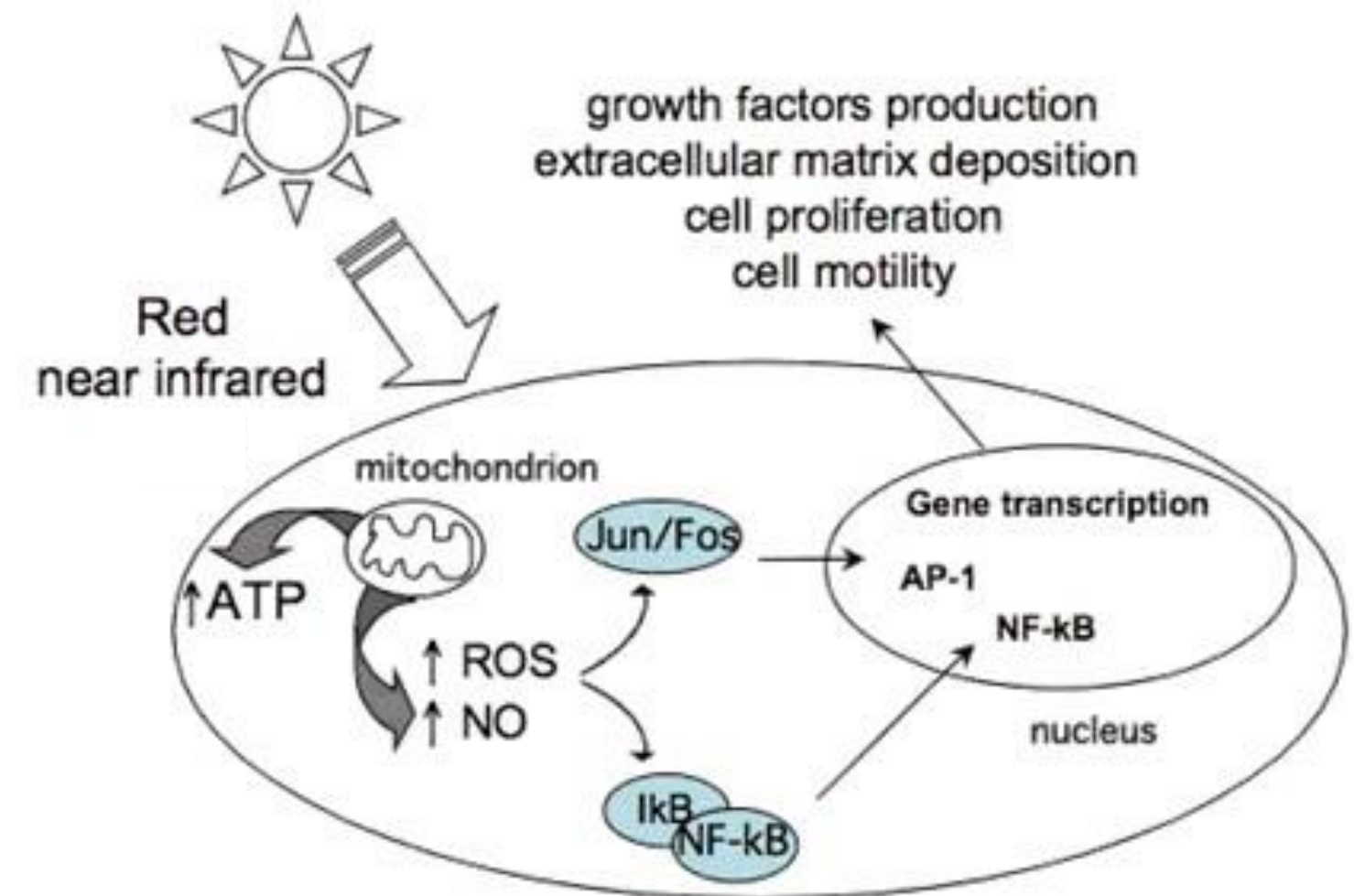
Biochemical mechanisms

There are specific cellular structures that can absorb specific wavelengths (colors) of light, known as photoreceptors.

The light stimulus alters cellular signaling, affecting the chemical behavior, metabolism, movement, and gene expression of the cell in a positive manner.

All associated enzymes and/or proteins are affected. This cascade event can ripple across an entire cell.

Influence of light on cell properties



Hamblin: <http://photobiology.info/Hamblin.html>

Absorption of different wavelengths of light (colors) in mitochondria

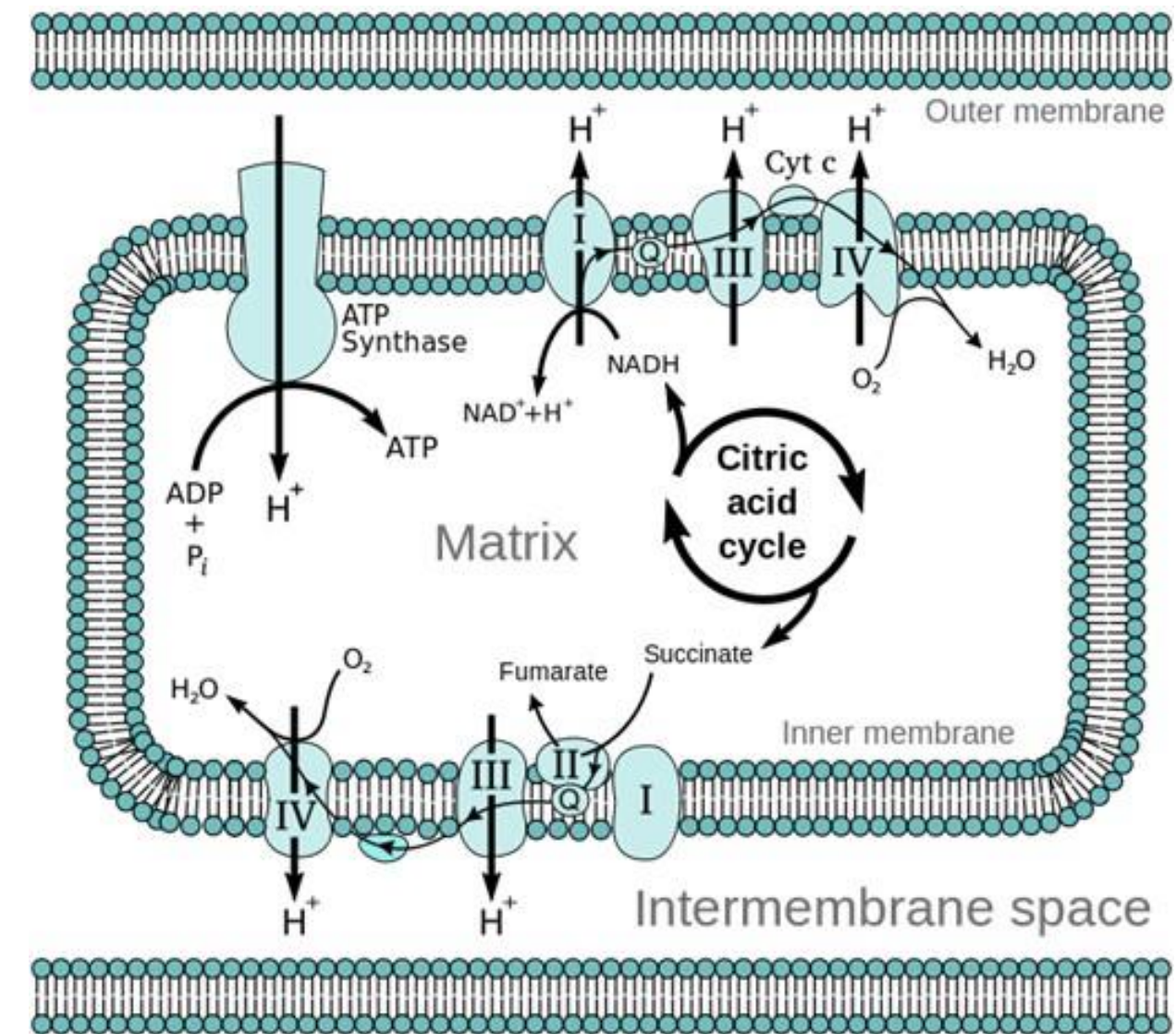
One avenue of the absorption of different colors within cells are through the different steps in the mitochondrial respiratory chain [8]

Complex 1 (NADH Dehydrogenase) absorbs blue and ultraviolet light

Complex 3 (cytochrome c reductase) absorbs green and yellow light

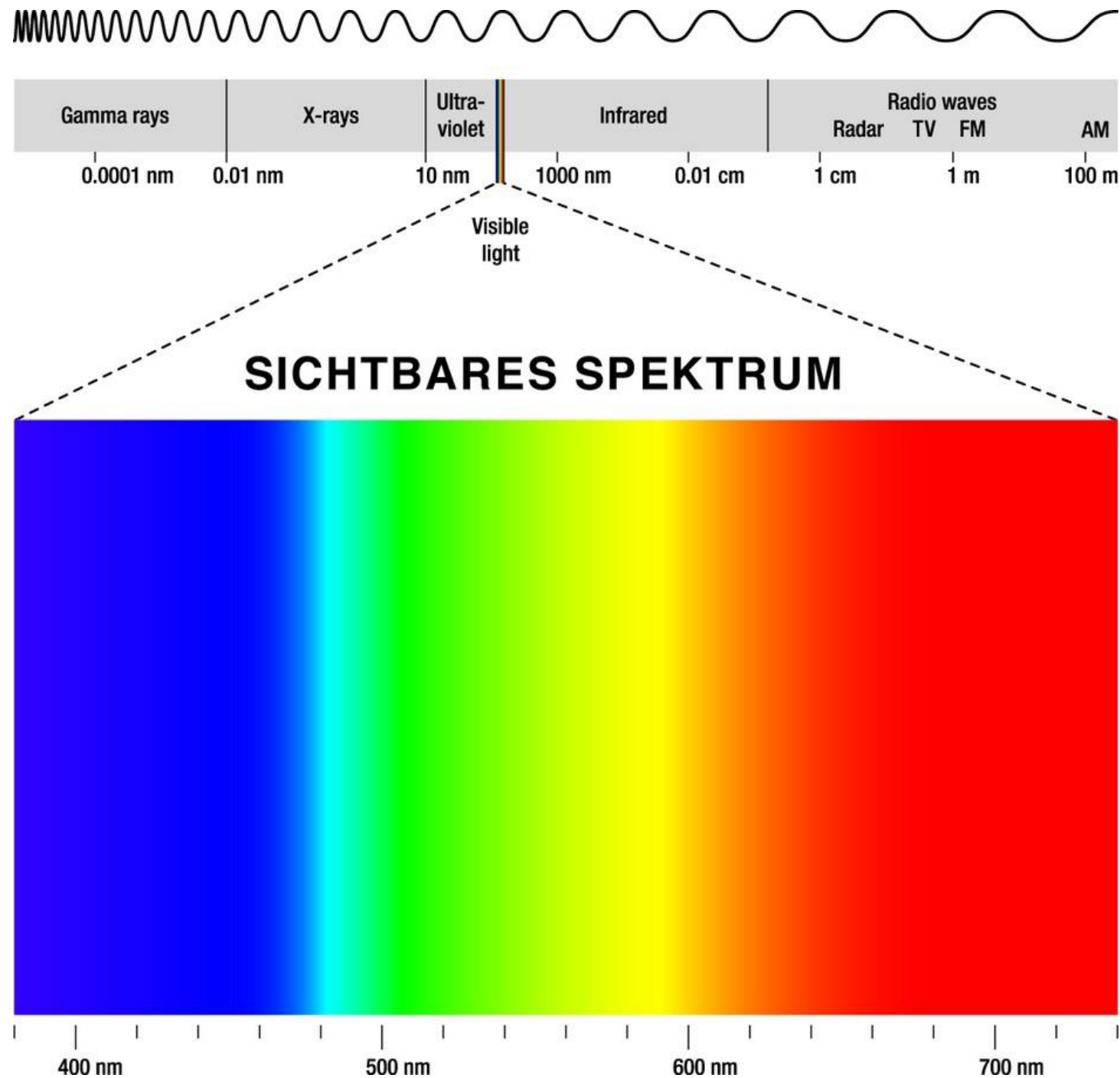
Complex 4 (cytochrome c oxidase) absorbs red and infrared light

Mitochondrial respiratory chain



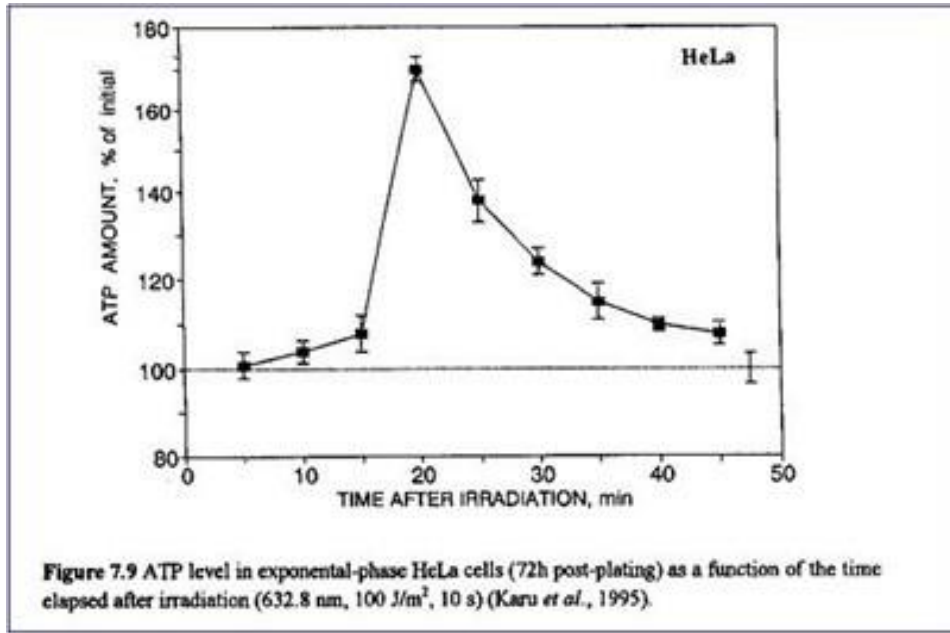
Hamblin: <http://photobiology.info/Hamblin.html>

Wavelengths and their effects



Red (620-750 nm) / Infrared (from 751 nm)

- Positive influence on rheological properties of the blood [21]
- Diminishing tendency of aggregation of thrombocytes and an improved deformability of erythrocytes [2,11]
- Activates phagocytic activity of macrophages [1,10]
- Positive effect on the proliferation of lymphocytes and B and T cell subpopulation [4,21]
- Stimulates immune response with increase of the immunoglobulins IgG, IgM and IgA [16]
- Stimulates interferons, interleukins and TNF alpha [17,18,19, 26]
- Improves hypoxia of tissue and activates fibrinolysis [24]
- Development of so called "giant mitochondria" with activation of various metabolic pathways, increased production of ATP and normalization of cell membrane potential [13,20]
- Analgesic, spasmolytic and sedative effects [24,25]
- Improves microcirculation in central nervous structures with stimulation of the functional activity of the hypothalamus and limbic system, leading to an activation of hormonal, metabolic, immunological and vegetative processes with mobilization of adaptive reserves [3]



ATP increase under laser irradiation (632 nm, red light) of a HeLa cell culture

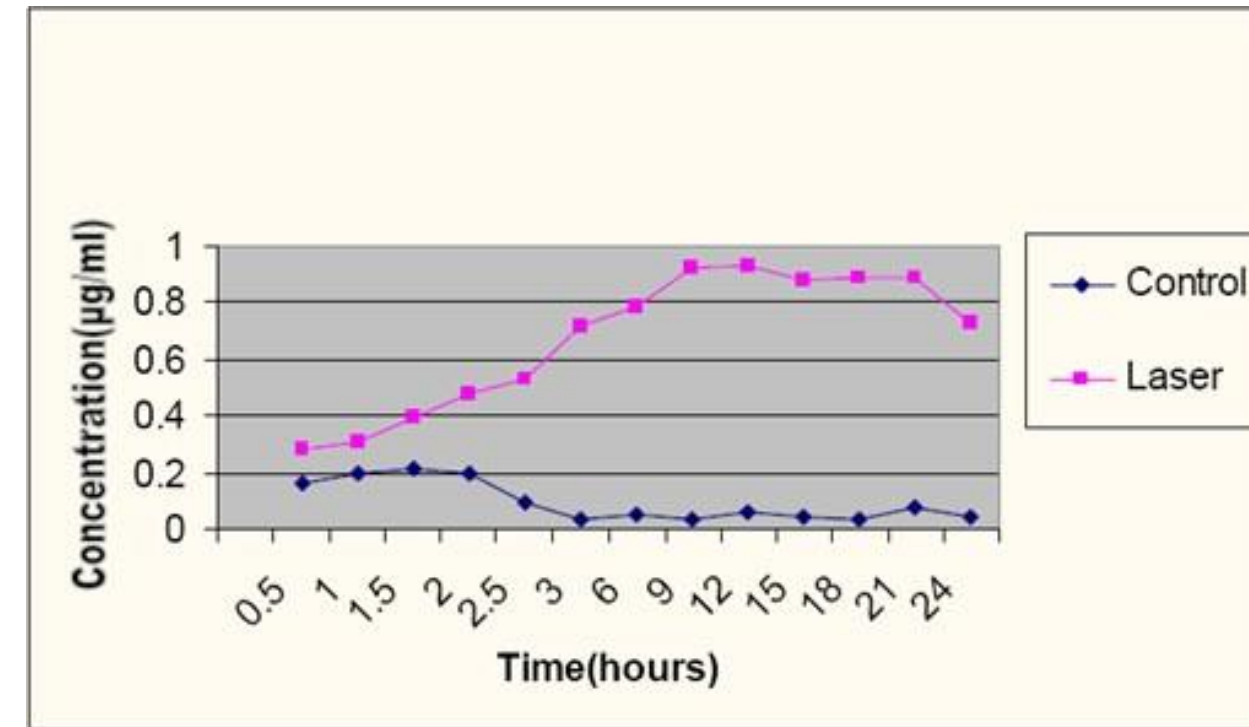
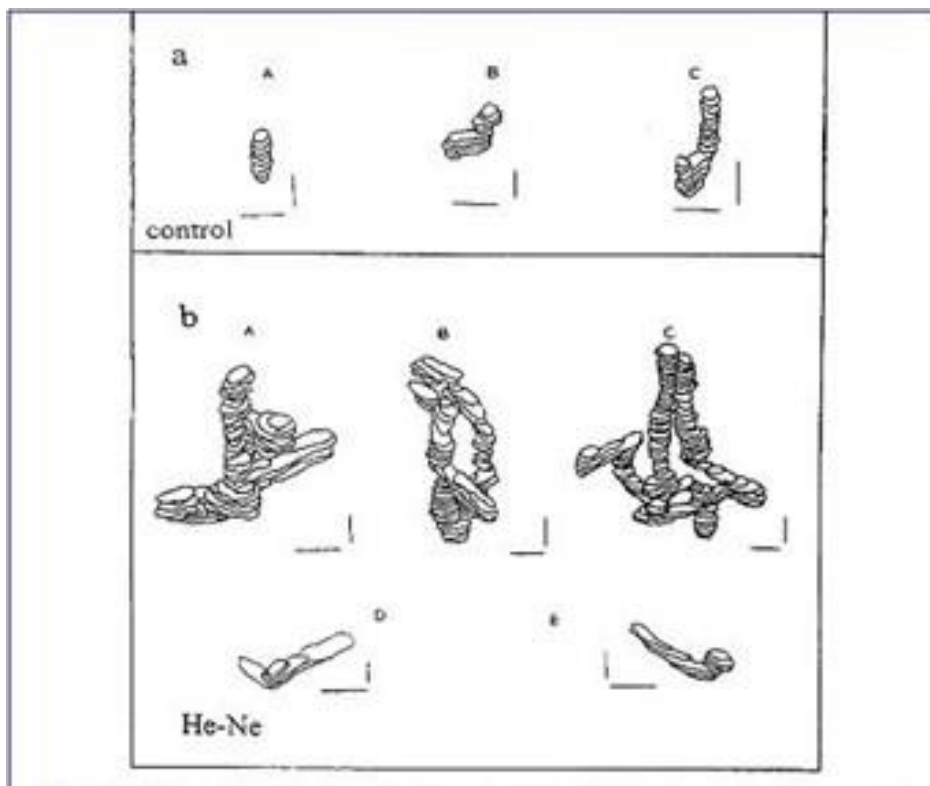
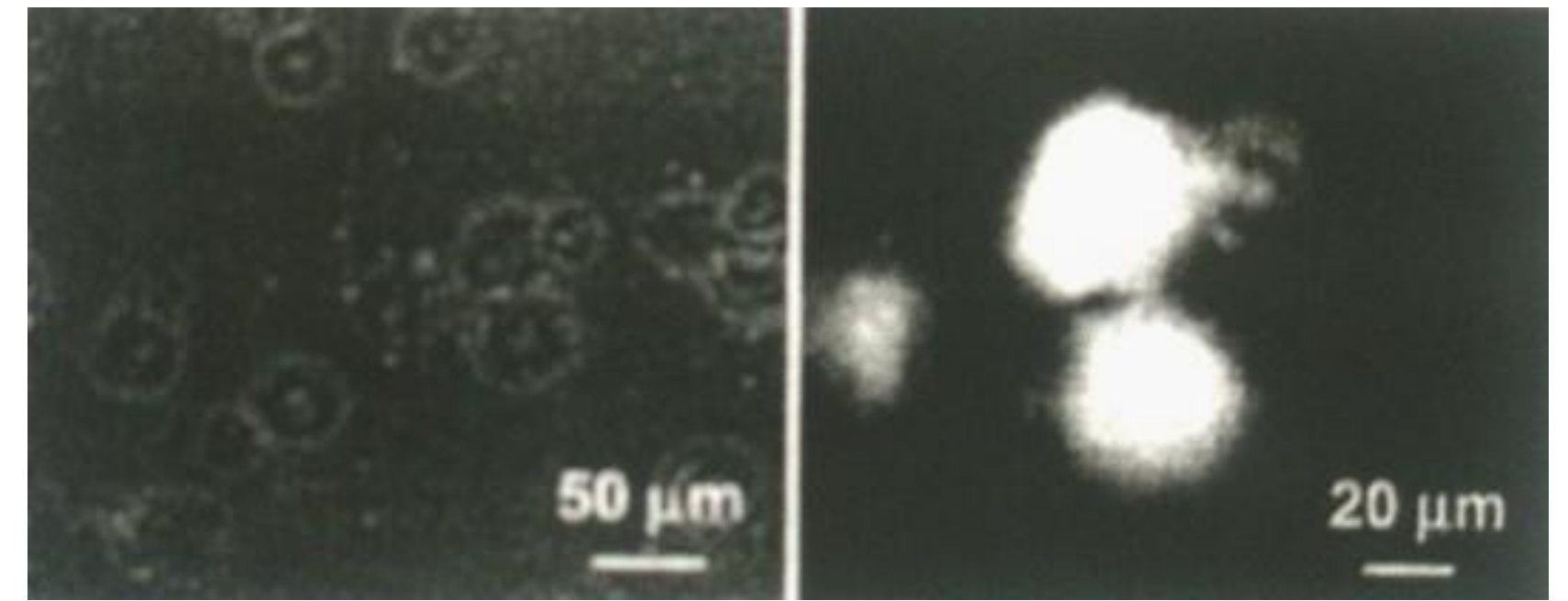


Figure (1) Concentration / Time relationship of IgM of both groups

Effects on the immune system



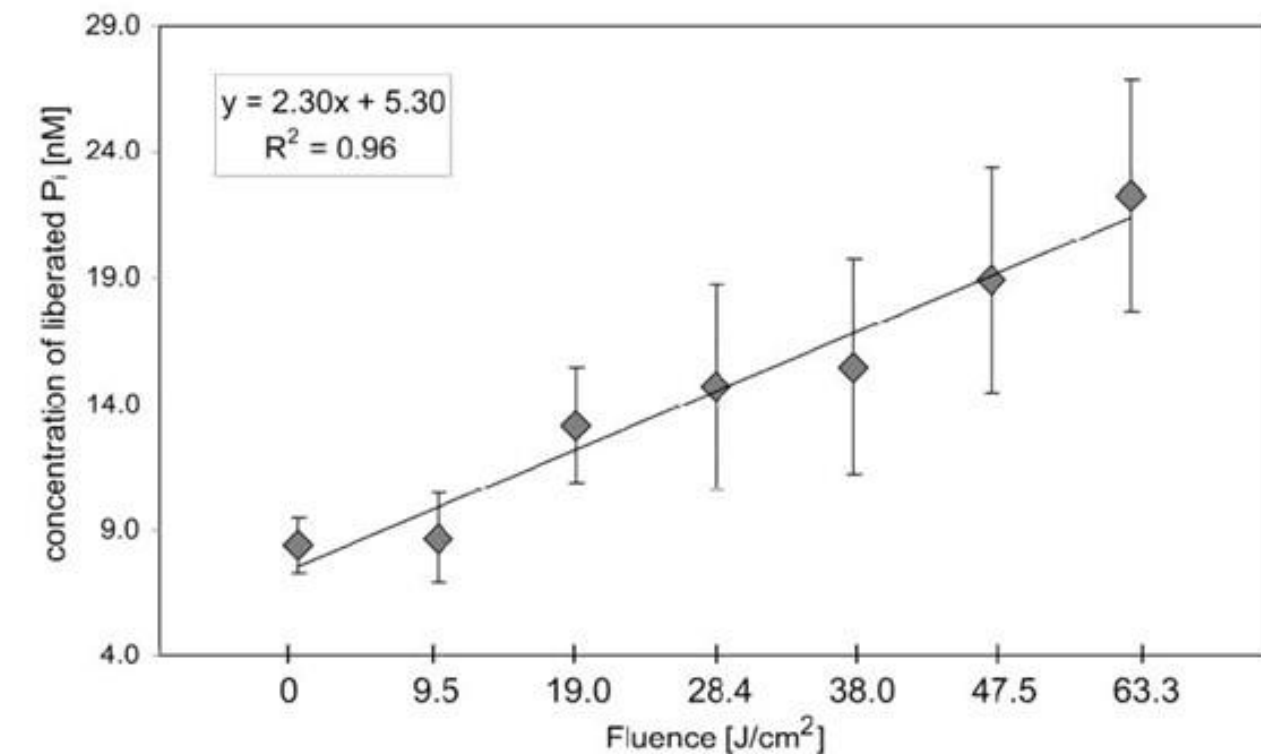
'Giant' mitochondria in human lymphocytes after laser irradiation (632 nm)



Activation of macrophages

Green (496-570 nm)

- Binds to hemoglobin
- Improves the function, behavior and cell elasticity of red blood cells [6,7,14,23]
- Increases oxygen delivery [6,7,12,14,18]Improves
- oxygen affinity
- Increases attraction of oxygen to hemoglobin
- Improves ability to carry more oxygen
- Lactic acid regulation [6,7]
- Reduces blood viscosity and improves blood flow [12,14,18]
- Activates reparative and stabilizing pathways [7,14,18]
- Platelet activation with gradual loss of natural platelet reactivity and ability to respond to activating agents [6,7]
- Positive effect on Sodium/Potassium Pump, which helps to regulate intra and extra cellular cation homeostasis [9]



Kassak et al. (2005): Activity of Na⁺/K⁺ ATPase of red blood cells irradiated with Nd:YAG laser of various fluences.

Green laser light increases the production of ATP in theirradiated mitochondria by more than 30% [9]

Results are presented as mean S.E.M. of the concentration of inorganic phosphate (n=8).

Equation of the trend line and coefficient of determination (R²) are shown.

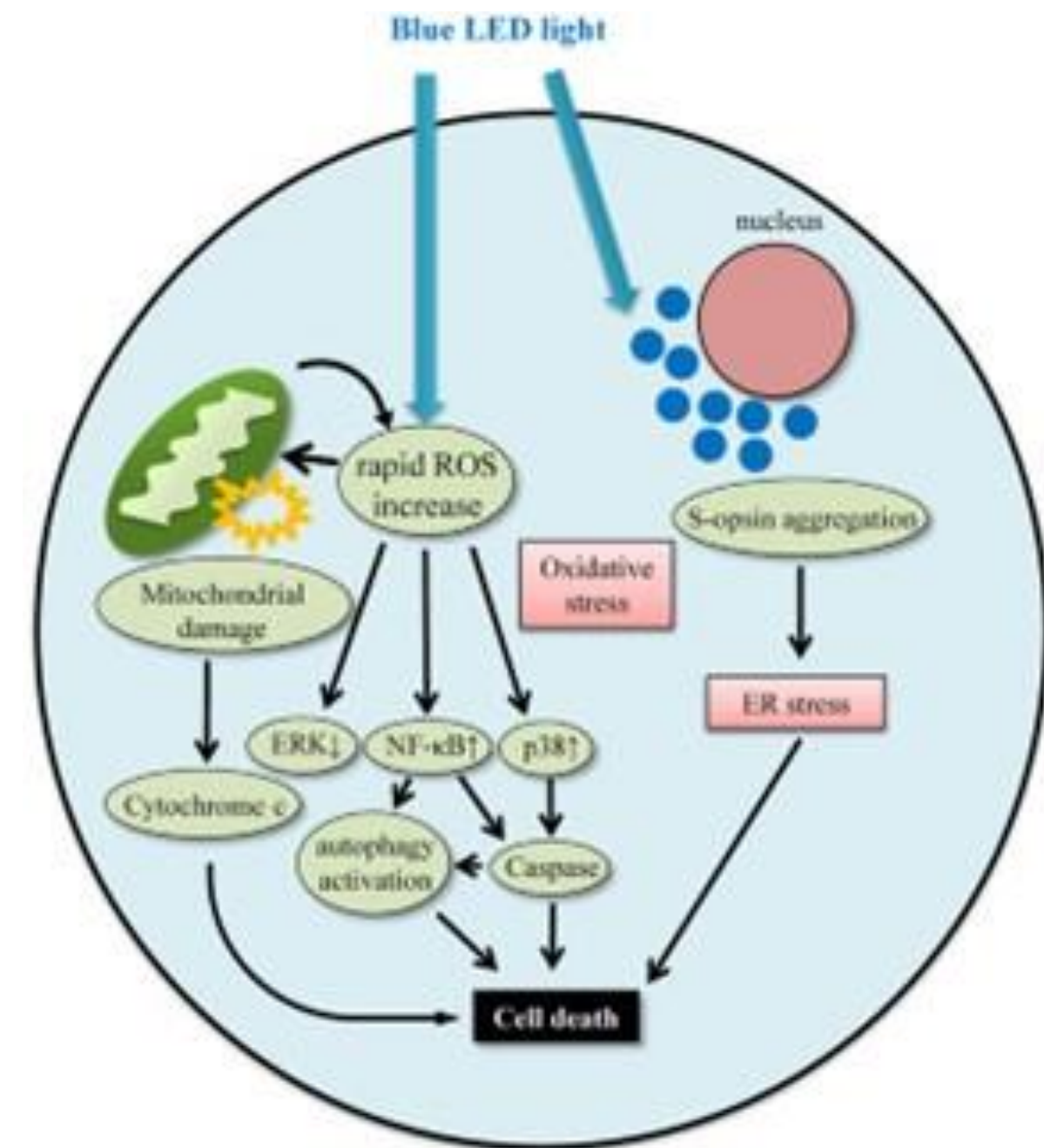
Blue (380-495 nm)

- Anti-inflammatory effects by reducing pro inflammatory cytokines and contributory factors for a variety of conditions (NF kB, CRP, IL2,IL6, TNF alpha, Leptin, chemokines etc.) [19]
- Releases nitric oxide (NO) in monocytes with vasodilatation and improvement of endothelial dysfunction [15]:

NO is known to be a growth, immune, and neuromodulator. It stimulates stem cell proliferation and has a critical role in analgesia, vasodilation and angiogenesis through c-GMP pathway. An increased production of NO activates the telomerase and thus stops shortening of telomeres (Anti-Aging) [22]. Increased NO levels lower blood pressure [15].

Blue light is effective for treating infections by production of ROS, especially in combination with photosensitive substances like curcumin or riboflavin [5].

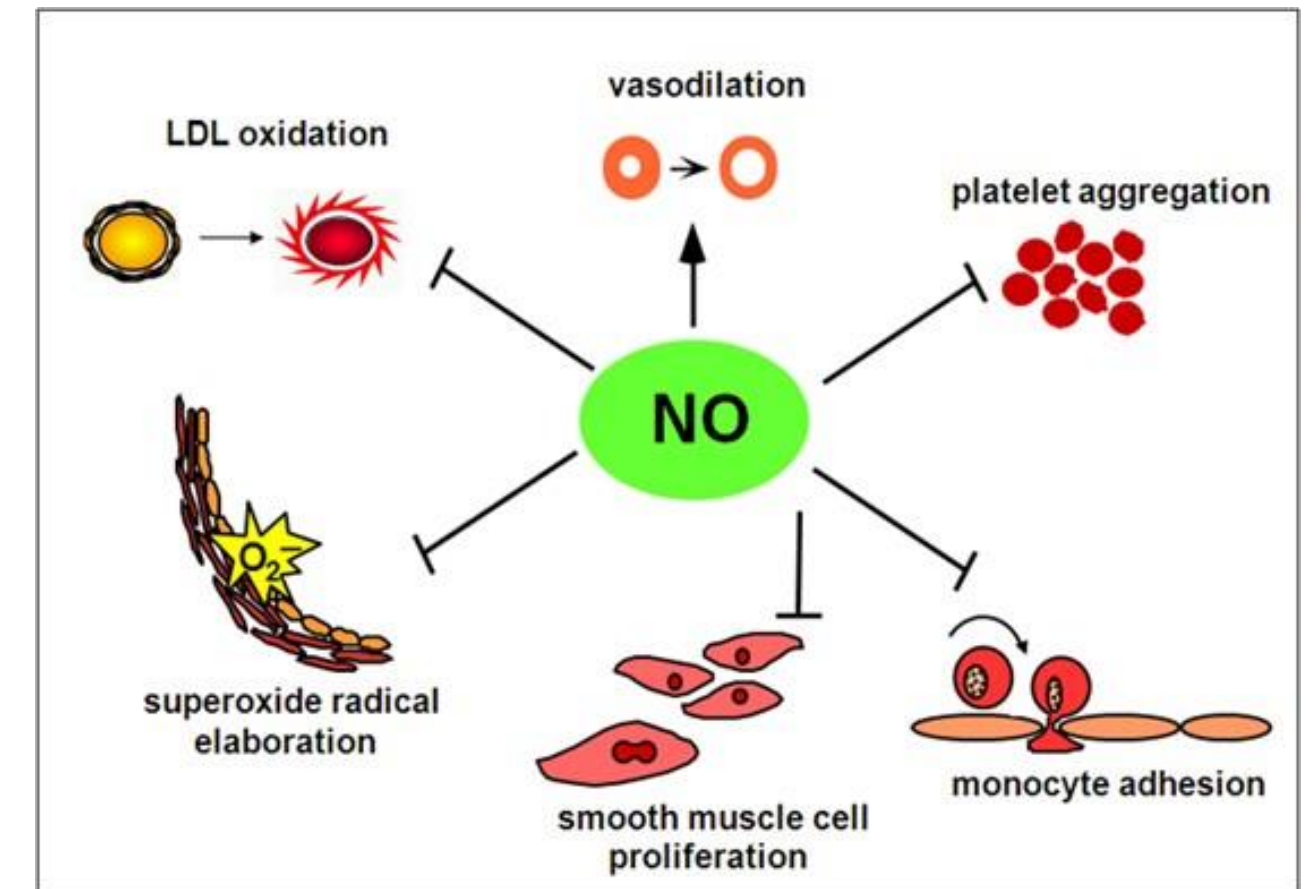
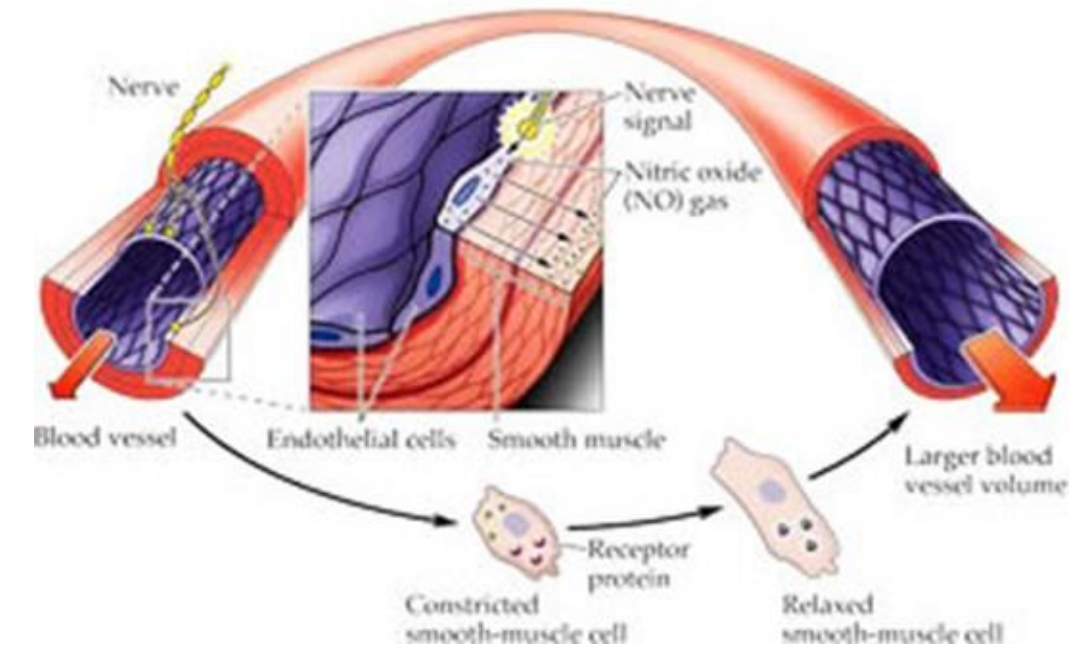
Influence of blue light on NO release



Nitric Oxide Mechanisms of action



The Science Behind **Nitric Oxide**



Anti-Aging effects of blue light

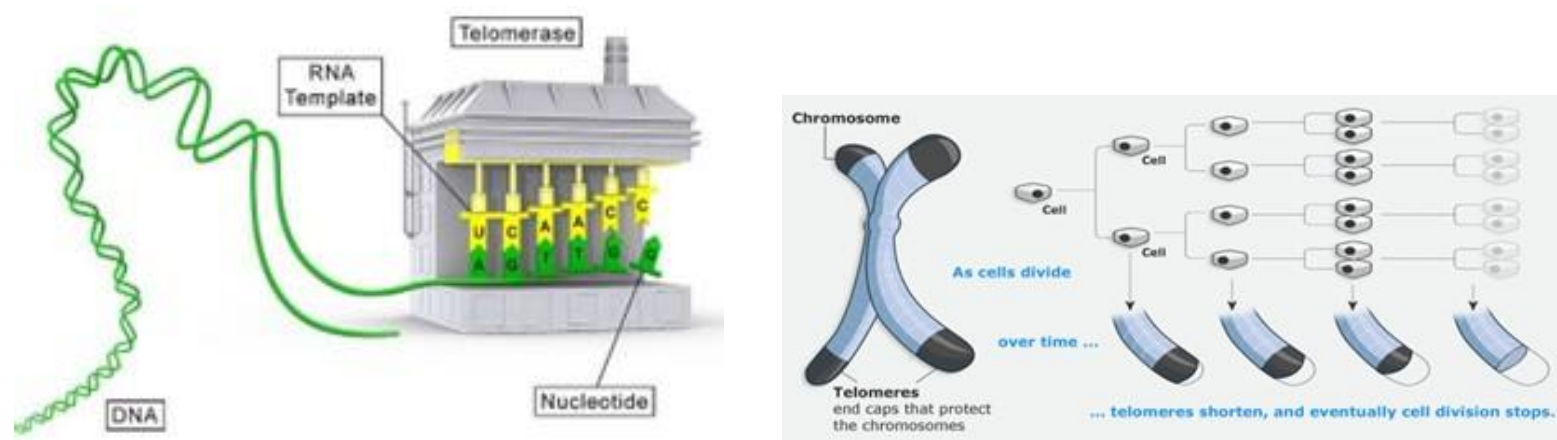
Nitric oxide activates telomerase and delays endothelial cell senescence

Mariuca Vasa, Kristin Breitschopf, Andreas M. Zeiher, Stefanie Dimmeler

The repeated addition of the NO donor S-nitroso-penicillamine significantly reduced EC senescence and delayed age-dependent inhibition of telomerase activity, whereas inhibition of endogenous NO synthesis had an adverse effect.

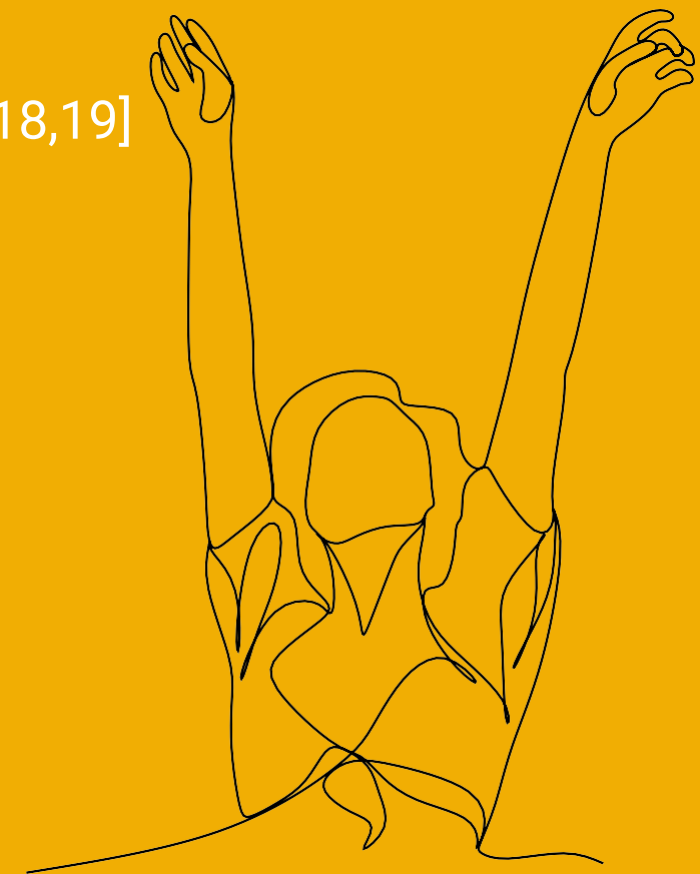
In summary, our results demonstrate that telomerase hactivation precedes EC aging.

NO prevents age-related downregulation of telomerase activity and delays EC senescence.



Yellow (571-590 nm)

- Improvement of the anti-oxidant enzymatic system with detoxifying effects [18,19]
- Strong anti-depressive effects, especially in combination with Hypericin from St. John's Wort, and positive influence on the general mood
- Positive effects on pain relief in chronic pain patientsImproves
- Serotonin and vitamin D production [18,19]
- Positive effects on the hormone system [18,19]



Main effects at a glance



Performance enhancement

- Boosts cellular energy by increase of ATP synthesis
- Lactic acid regulation

Immune system

- Activation of macrophages
- Pathogen deactivation effective against bacteria and viruses

Regeneration

- Reduction of inflammations
- Pain relief
- Activation of reparative and stabilizing pathways

Psyche

- Improvement of serotonin and vitamin D production
- Positive influence on the general mood (strong anti-depressive effects)
- Regulation of hormone system

Blood properties

- Improvement of microcirculation
- Reduction of blood viscosity
- Blood pressure reduction
- Increase of oxygen delivery
- Function, behavior and cell elasticity improvement of red blood cells
- Detoxifying effects
- Activation of stem cells
- Positive effects on heart and metabolism

Inner balance

- Significant increase of melatonin
- Improved sleep quality

Anti-Aging

- Releases nitric oxide (NO) and activates telomerase

Applications of Low-Level Laser Therapy



- Internal diseases (diabetes, chronic liver and kidney diseases)
- Metabolic disorders
- Cardiovascular diseases
- Allergies
- (Chronic) inflammation
- Auto immune diseases
- Weakened immune system
- Additive cancer therapy (in combination with photosensitizers) and prevention
- Anti-Aging
- Depression, fatigue syndrome and burn out
- Tinnitus
- Sleep disorders
- Concentration disorders
- Prevention of jet lag and thrombosis
- General performance increase and better regeneration (in sports)
- For conditions in children learn more on www.luminovavita.ae

EFFECTS OF THE ENDOLIGHT BAND

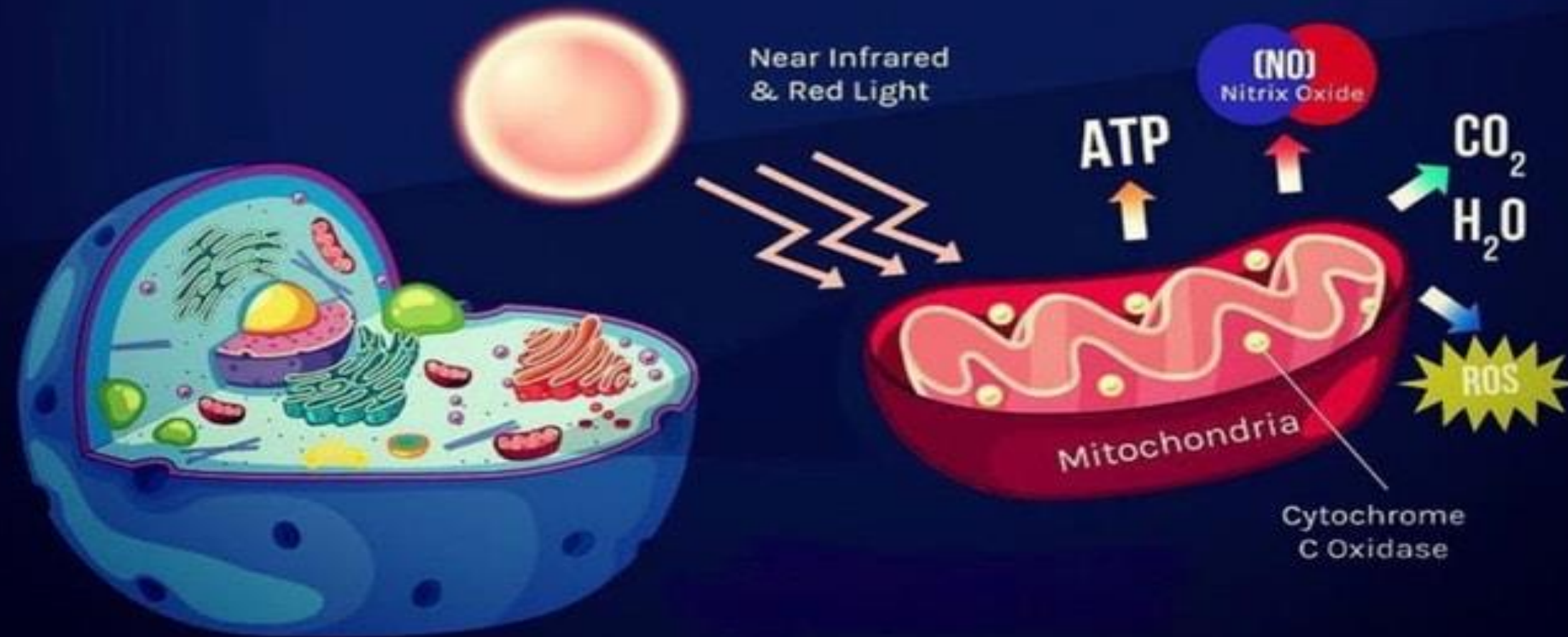
PHOTOBIO-MODULATION

Photobiomodulation is like jump starting a dead car battery. It improves the function of mitochondria within the cell, which increases ATP production.

SHINING LIGHT ON TISSUE
(Red light or Near-infrared)

IMPROVED TISSUE FUNCTION

- Anti-inflammatory Effects
- Improved Energy Metabolism



THE ENDOLIGHT®

EndoLight®

Laser Watch 2.0



All benefits at a glance

- More true laser diodes
- 7x more powerful than the Spectra Watch: up to 35 mW/diode
- Additional wavelength: Infrared (808 nm)
- Intuitive operation through pre-set programs
- Improved wearing comfort: Thin, ergonomic and lightweight design





EndoLight® at max. power
output **280 mW**



With the EndoLight®, the lasers are optimally directed and penetrate deeply and focused into the wrist.
The radiation to the outside is significantly lower.

STUDIES

Oxygen saturation

Open Access

*OBM Integrative and
Complementary Medicine*



Editorial

Laser Watch—New Generation 2021: Modern Integrative Photomedicine Equipment for Photobiomodulation

Gerhard Litscher *

Research Unit for Complementary and Integrative Laser Medicine, Research Unit of Biomedical Engineering in Anesthesia and Intensive Care Medicine, and Traditional Chinese Medicine (TCM) Research Center Graz, Medical University of Graz, 8036 Graz, Austria; E-Mail: gerhard.litscher@medunigraz.at



3. Preliminary Results

The purpose of this preliminary measurement, which was carried out with near-infrared spectroscopy (NIRS), was to investigate peripheral rSO₂ for the first time, before, during, and immediately after laser watch stimulation. The results indicate that the rSO₂ values were significantly higher during laser watch blood irradiation of the radial and ulnar artery with the different available wavelengths (see methods section) as compared to the baseline values before stimulation (Figure 4).



Figure 4 Continuous rSO₂ measurement values in percentage before, during, and after laser watch stimulation at the wrist of the left arm, which was recorded in the crook of the left elbow. Note the increase during the stimulation period with a duration of about 10 min.

During use of the EndoLight®, cerebral oxygen saturation (rSO₂) values are significantly higher.

A good oxygen supply is important for body cells to perform their function properly.

Heart rate variability observation

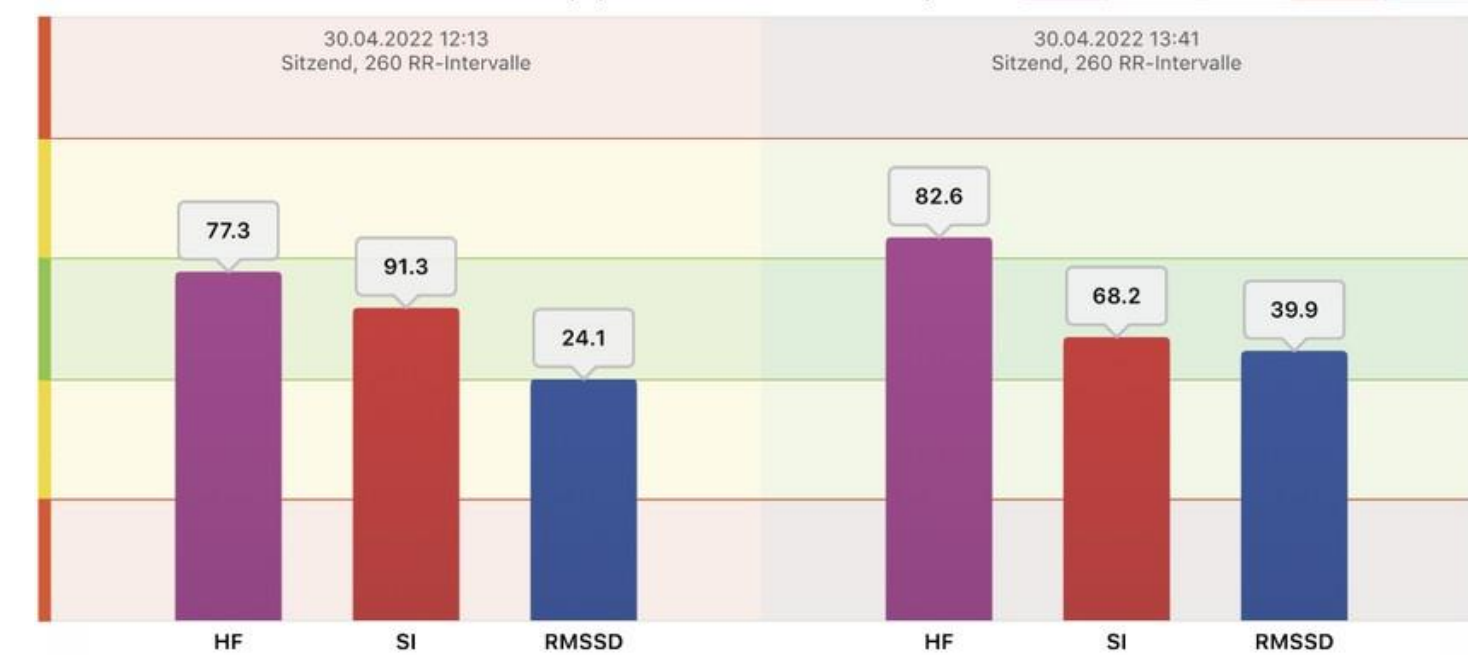
Patient 1



Patient 2



Patient 3



The sympathetic nervous system is characterized by an increase in performance and is activated, for example, in times of stress and emergency situations. The baseline data is measured at rest and in a sitting position, therefore the sympathetic nervous system should be significantly lower than the parasympathetic nervous system as the measurement environment does not reflect a fight or flight situation.

The parasympathetic nervous system is used for regeneration, building up strength reserves and enhancing metabolic processes.

Conclusion: After wearing the EndoLight®, the activity of the sympathetic nervous system decreased significantly. The activity of the parasympathetic nervous system, on the other hand, increased. This creates an environment that allows the innate regulatory mechanisms in the body to thrive.

General observations of first test persons

After using the EndoLight® in Recharge mode

- Reduction of fatigue: "No more afternoon slump."
- "During shift work and start the day much peppier since I've been using the EndoLight® regularly."
- "When I know I have a busy day ahead of me, I use the EndoLight® on the "Recharge -Program" right after I get up - it gives me a real energy boost and can even replace the first cup of coffee for me."
- "I have significantly more strength and endurance when exercising."

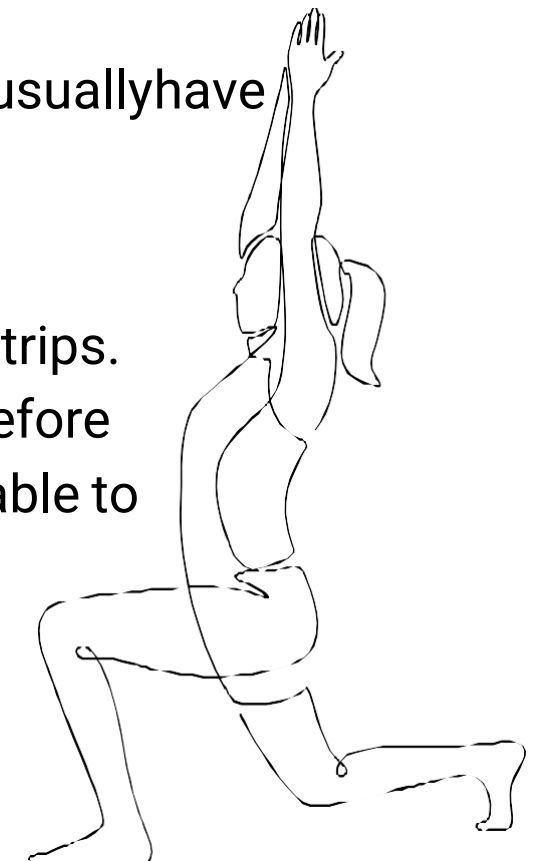


After using the EndoLight® in Relax mode

- "I can really feel myself "coming down" and my body recovering."
- "The EndoLight® helps me wind down and sleep peacefully during a very stressful work week." (30 min. in "Relax Mode" before sleep).

After using the EndoLight® in Recover mode

- "My cold was over quicker than I'm used to. I usually have to deal with the symptoms for much longer."
- "My work requires regular overseas business trips. Since I have been wearing the EndoLight® before and immediately after the flight, I have been able to keep jet lag to a minimum."



Photodynamic Therapy (PDT)

The combination of laser therapy with light-sensitive substances proves to be very successful.

The principle behind this is photodynamics.

Many substances in our dietary supplements react to light of certain wavelengths. With the help of the EndoLight®, these photosensitizers can reach their full potential, e.g. to fight tumor cells or pathogens such as bacteria, viruses and parasites.

Curcumin, for example, is such an active ingredient. It absorbs the blue laser light.



Our supplements are absorbed by the body within 45-60 minutes. You should optimally start your EndoLight® session one hour after intake.

DIETARY SUPPLEMENTS

UltraCur

The Daily Supporter

Strengthens your body from within

UltraCur is the right choice for daily support of your health.

The combination of curcumin and vitamin C protects your cells from stress and supports the immune system, reducing exhaustion and fatigue.

Curcumin absorbs blue light.

Its absorption maximum is at approx. 440 nm.

Active ingredients (per capsule):

N-Acetylcysteine: 547 mg

Vitamin C (Ascorbic Acid): 200 mg

Curcumin: 55 mg

Ingredients: N-Acetylcysteine, Vitamin C (Ascorbic Acid), Capsule material: Pullulan, Curcumin, Release agent: Leucine, Modified food starch, Emulsifier: Sunflower lecithin.

Suggested use: 2x2 capsules



UltraProtect

The Guardian

Natural well-being

UltraProtect protects cells from oxidative stress and fights free radicals, which we unintentionally absorb through our environment.

Chlorophyll absorbs red (620-660 nm) and blue light (400-450 nm).

The absorption spectrum of phycocyanin is at a wavelength between 580 and 660 nm (red/yellow).



Active ingredients (per capsule):

Liposomal Phycocyanin: 300 mg

Na-Mg Chlorophyllin: 200 mg

Na-Cu Chlorophyllin: 100 mg

D- α -Tocopherol: 20 mg

Ingredients: Liposomal Phycocyanin, Sodium Magnesium Chlorophyllin, Sodium Copper Chlorophyllin, Capsule material: Pullulan, Alpha-Tocopherol, Modified food starch, Release agent: Silicon dioxide.

Suggested use: 2x1 capsule

UltraDefense

The Booster

Supports you when it counts

UltraDefense contains everything to immediately activate and strengthen the body's internal defense system.

Riboflavin and vitamin D should always be at hand when the body is exposed to external stressors.

Riboflavin absorbs light in the UVA- (375 nm) and blue range (450 nm).



Active ingredients (per capsule):

Natrium-Riboflavin-5-phosphate: 131 mg

Thereof: Riboflavin (Vitamin B2): 103 mg

Cholecalciferol (Vitamin D3): 25 μ g

Ingredients: Modified food starch, Sodium-Riboflavin-5-phosphate, Capsule material: Pullulan, Cholecalciferol (Vitamin D3), Filler: Maltodextrin, Emulsifier: Sucrose.

Suggested use: 2x1 capsule