

Weber Medical Laser Watch Spectra

Red, Green, Blue and Yellow Diodes



Spectra

Component	Diode Specifications
Back	4 red diodes (650 nm) 2 yellow diodes (589 nm) 2 green diodes (532 nm) 2 blue diodes (450 nm)
Pad	3 red diodes 3 yellow diodes 3 blue diodes 3 green diodes
Nose Applicator	2 red diodes
Ear Applicator	2 red diodes

Weber Medical Laser Watch: Attachments



Pain & Muscle Tension

Red light has analgesic, spasmolytic and sedative effects [62, 63]. Yellow light alleviates (chronic) pain syndromes.

Skin

Blue light acts anti-inflammatory by reducing pro-inflammatory cytokines and contributory factors for a variety of conditions (NF-kB, CRP, IL2, IL6, TNF alpha, Leptin, chemokines etc.) [51]. Red light improves oxygen delivery to tissue [62].



Hearing loss, Tinnitus

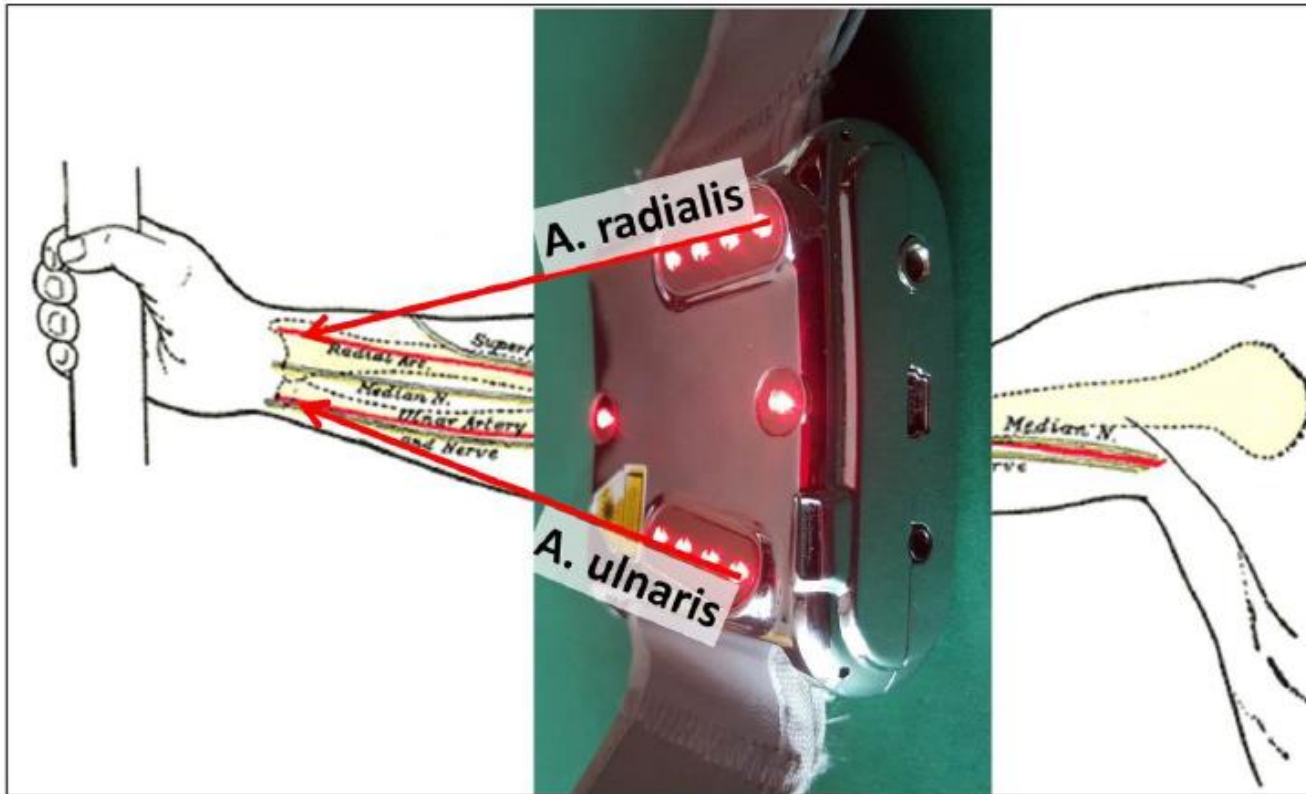
A lack of the vital cell energy ATP (adenosine triphosphate) can lead to tinnitus. An undersupply results in cell damage and subsequently in cell death. The laser boosts cell metabolism by enhancing ATP production and supports healing processes of degenerative diseases. It also improves microcirculation in tissues and accelerates cell growth [71].



Intranasal blood irradiation, relief from rhinitis, sinusitis and allergic reactions

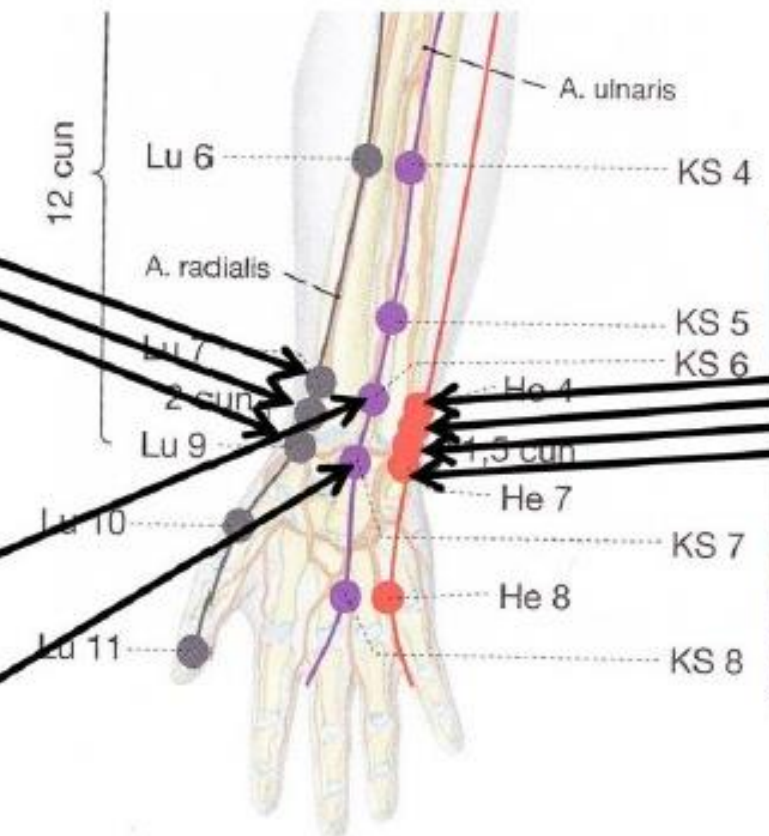
In case of colds red light can support the decongestion of the nasal mucosa. Furthermore, red light inhibits histamine release and reduces the reaction of the immune system cells to allergens. Due to the many fine blood vessels inside the nose the intranasal application is ideal for external blood irradiation [72, 73].

Application/Protocol



Laser Watch should be used once or twice per day for 30-60 min.

Stimulation of Acupuncture Points



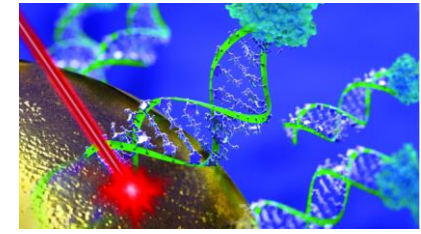
Lingdao He 4
Tongli He 5



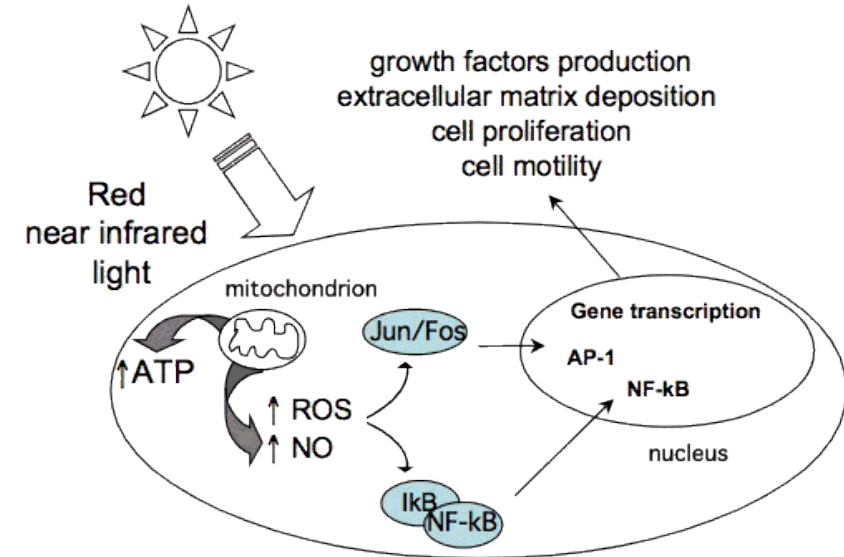
Neiguan KS 6
Daling KS 7

Yinxi He 6
Shenmen He 7

Biochemical Mechanisms



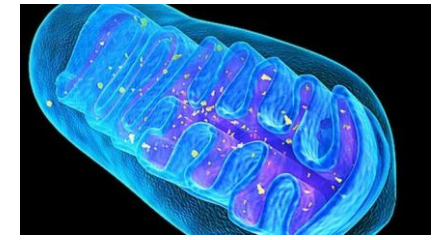
- In general, there are specific cellular structures that can absorb specific wavelengths (colors) of light (known as photoreceptors)
- The light stimulus gives a cellular signal affecting the chemical behavior, metabolism, movement and gene expression
- All associated enzymes and/or proteins are now affected
- This cascade event can ripple across an entire cell



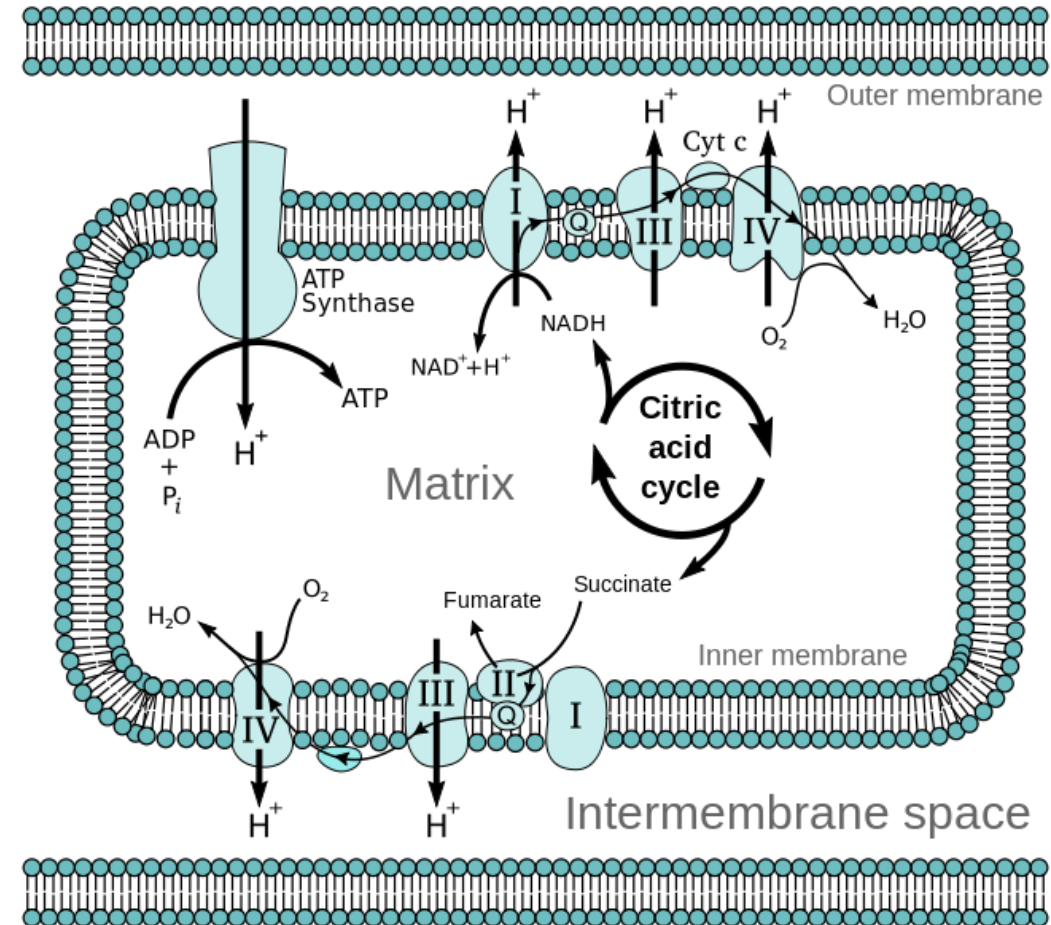
Hamblin:

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

Absorption of Different Wavelengths of Light (Colors) in Mitochondria



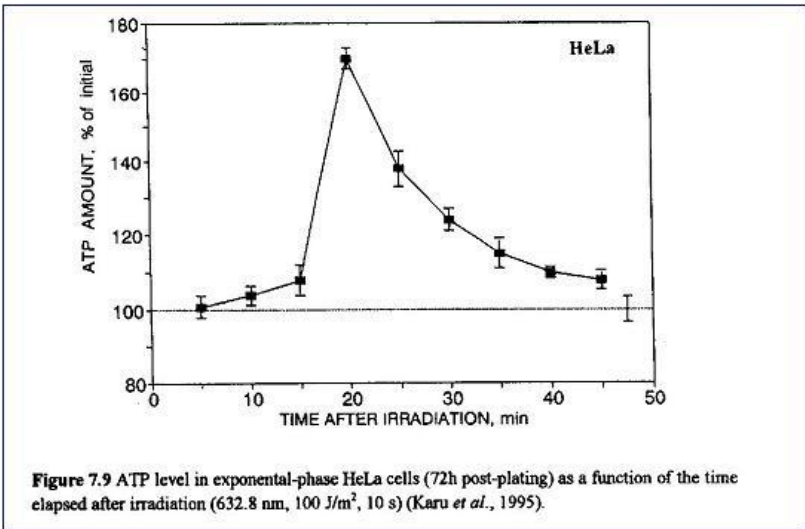
- One example for the absorption of different colors within cells is the process in the mitochondrial respiratory chain [21]
- Complex 1 (NADH dehydrogenase) absorbs blue and ultraviolet light
- Complex 3 (cytochrome c reductase) absorbs green and yellow light
- Complex 4 (cytochrome c oxidase) absorbs red and infrared light



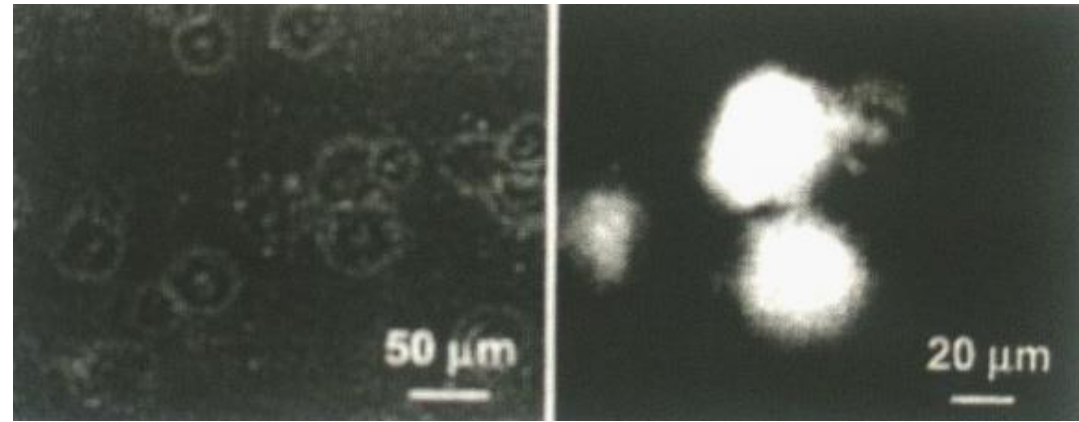
Effects of Red Light



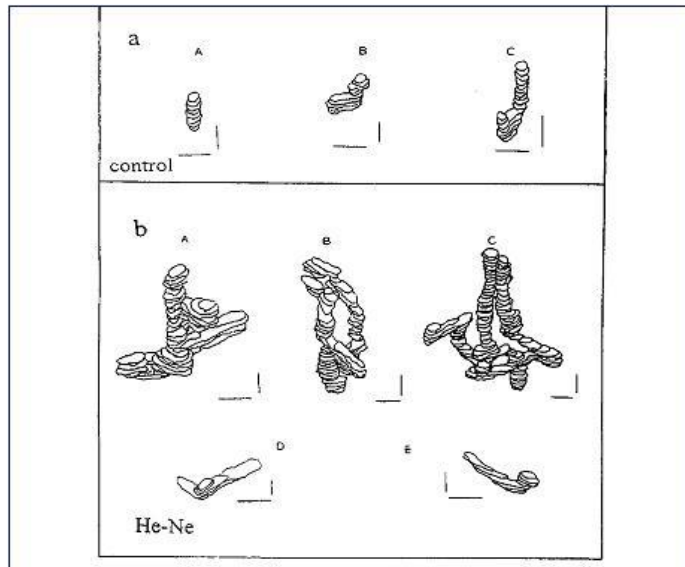
- Positive influence on rheological properties of the blood (58)
- Diminishing tendency of aggregation of thrombocytes and an improved deformability of erythrocytes [10, 29]
- Activation of phagocytic activity of macrophages [9, 26]
- Positive effect on the proliferation of lymphocytes and B-and T-cell subpopulations [13, 58]
- Stimulation of immune response with increase of the immunoglobulins IgG, IgM and IgA [43]
- Stimulation of interferons, interleukins and TNF-alpha [48, 50, 51, 68]
- Hypoxia of the tissue is improved, and fibrinolysis is activated [62]
- Development of so-called “giant mitochondria” with activation of various metabolic pathways, increased production of ATP and normalization of cell membrane potential [36, 55]
- Analgesic, spasmolytic and sedative effects [62, 63]
- 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 [11]



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



Activation of macrophages



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

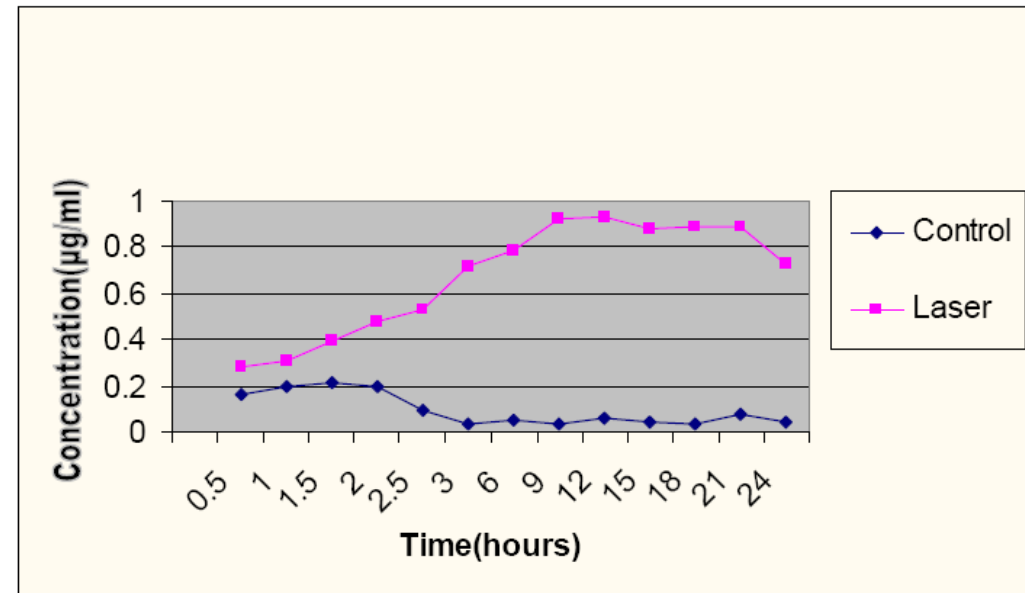
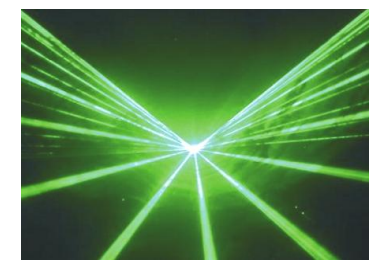
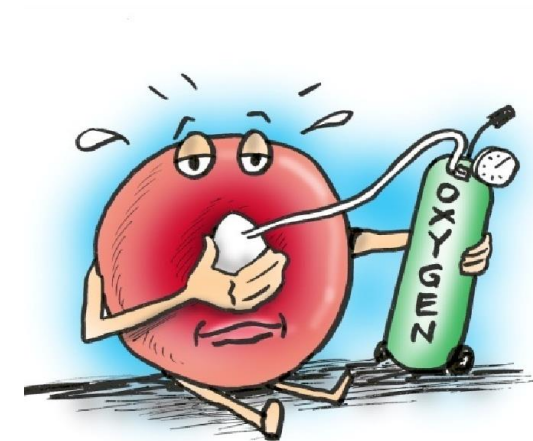
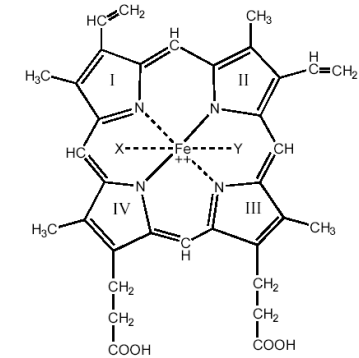


Figure (1) Concentration / Time relationship of IgM of both groups
Effects on the immune system

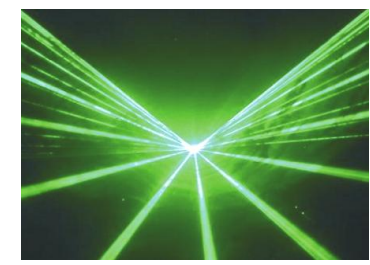
Effects of Green Light



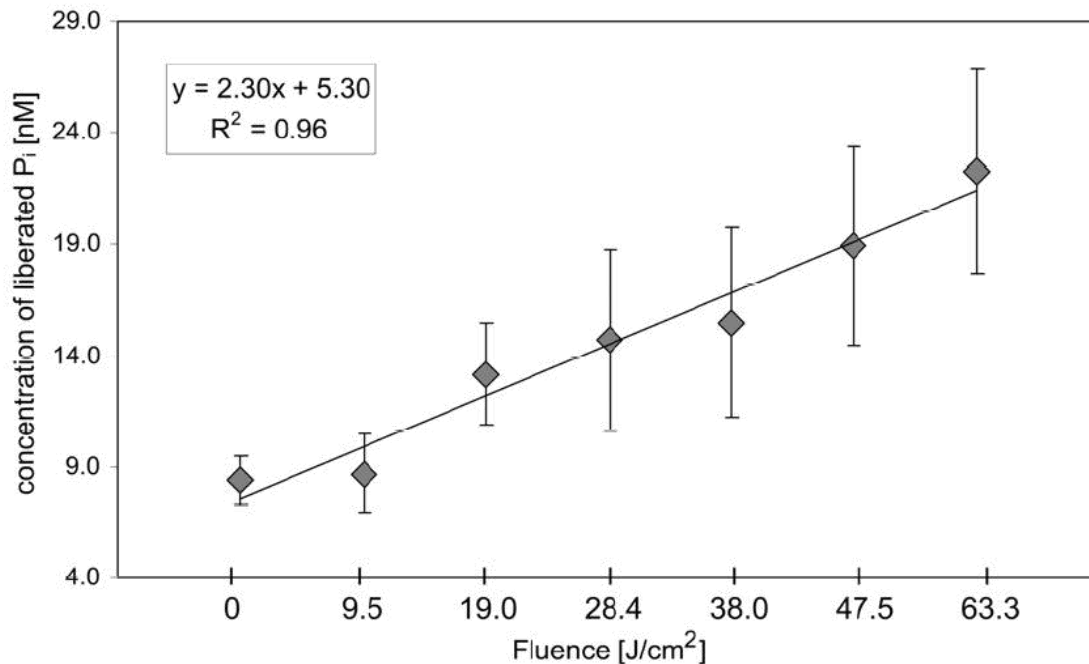
- Green binds to hemoglobin
- Improves the function, behavior and cell elasticity of red blood cells [17, 20, 38, 61]
- Increases oxygen delivery [17, 20, 31, 38, 50]
 - improved oxygen affinity
 - increased attraction of oxygen to hemoglobin
 - Improved ability to carry more oxygen
- Decreases in lactic acid [17, 20]
- Reduces blood viscosity and improves blood flow [31, 38, 50]
- Activates reparative and stabilizing pathways [20, 38, 50]
- Platelet activation with gradual loss of natural platelet reactivity and ability to respond to activating agents [17, 20]
- Positive effect on Sodium/Potassium Pump, which helps to regulate intra-and extra-cellular cation homeostasis [23]



Effects of Green Light



Kassak et al. (2005): Green laser light increases the production of ATP in the irradiated mitochondria by more than 30% [23]

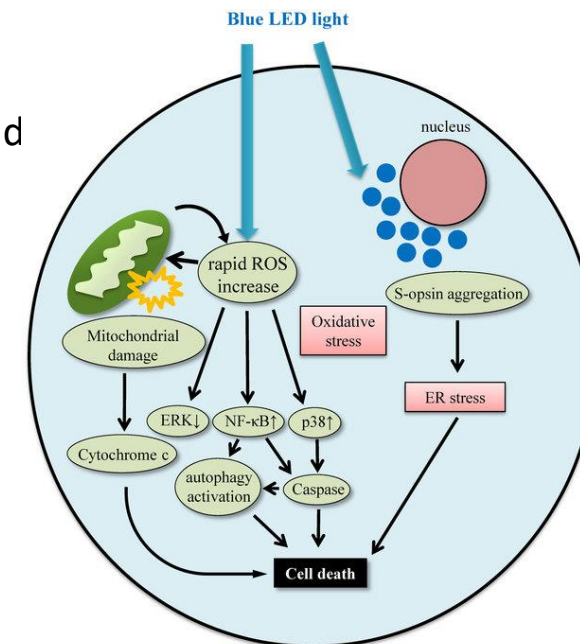


Activity of Na^+/K^+ -ATPase of red blood cells irradiated with Nd:YAG laser of various fluences. Results are presented as mean \pm S.E.M. of the concentration of inorganic phosphate (n=8). Equation of the trend line and coefficient of determination (R^2) are shown.

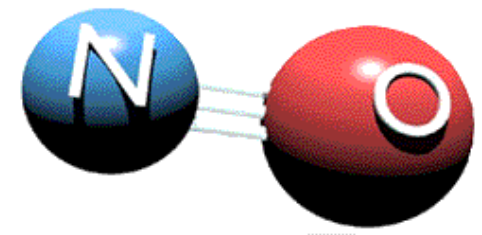
Effects of Blue Light



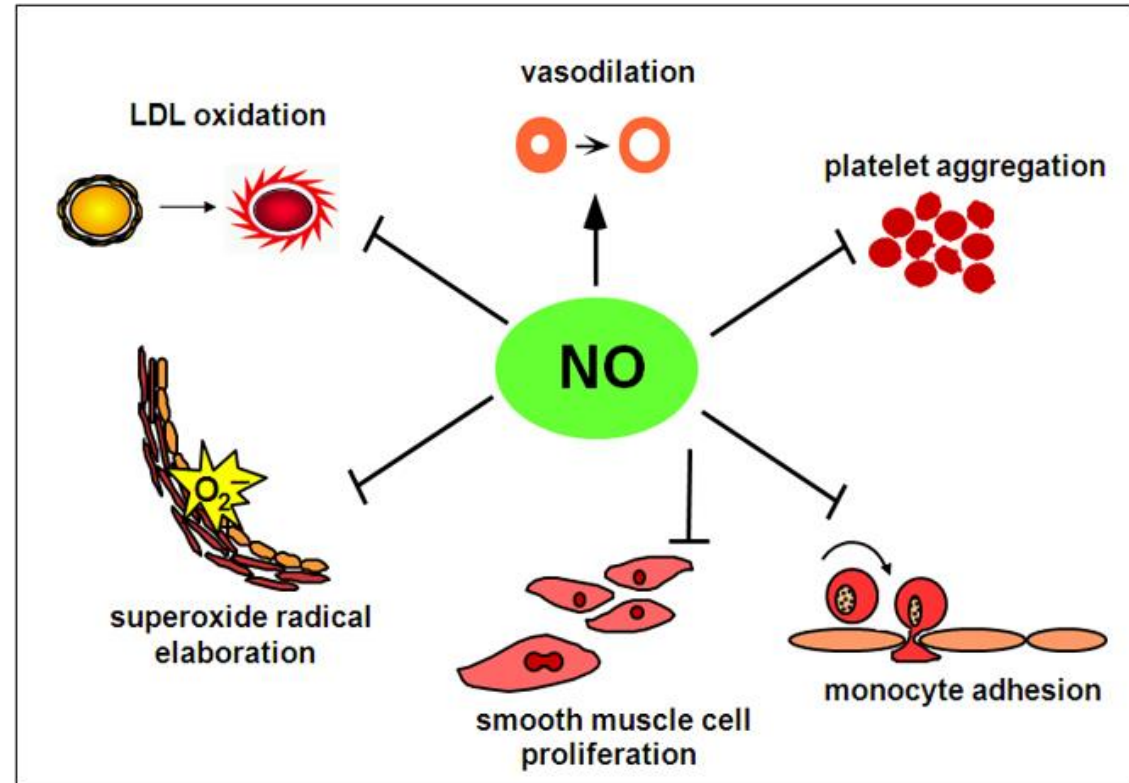
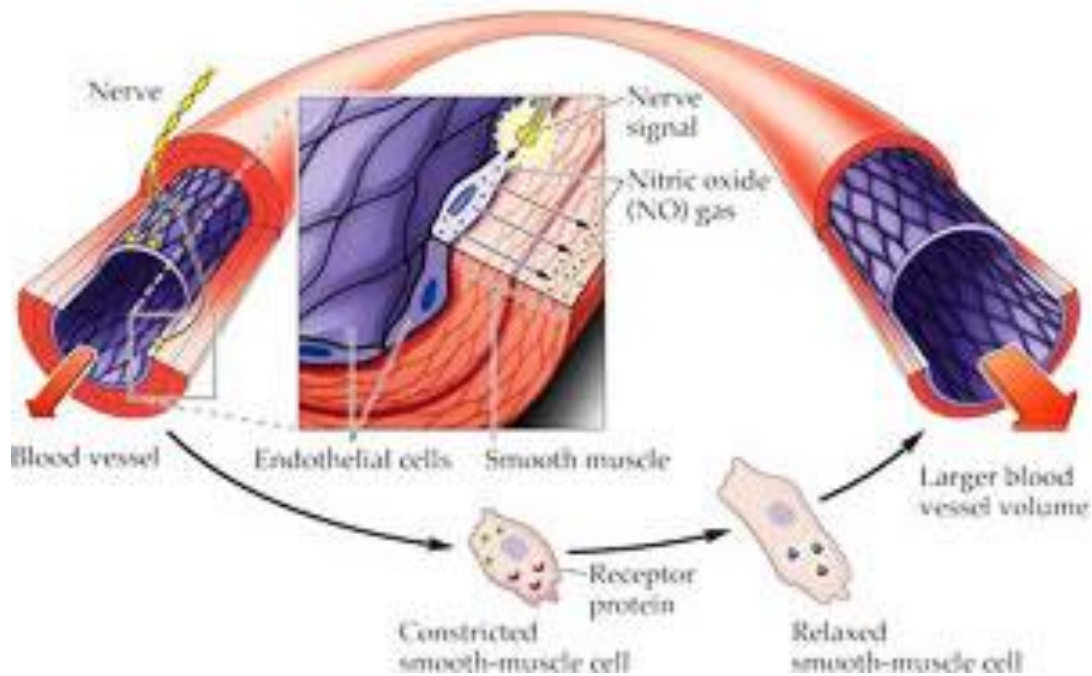
- Blue light **releases nitric oxide (NO) in monocytes with vasodilatation and improvement of endothelial dysfunction** [42]
- NO is known to be a growth, immune, and neuromodulator, as well as a stimulator of stem cell proliferation and it has a critical role in analgesia, vasodilation and angiogenesis through c-GMP pathway
- Increased production of NO is activating the telomerase and thus stopping shortening of telomeres → anti-aging [60]
- Increased NO is lowering blood pressure [42]
- Blue laser is known to act anti-inflammatory by reducing pro-inflammatory cytokines and of conditions (NF-kB, CRP, IL2, IL6, TNF alpha, Leptin, chemokines etc.) [51]
- Blue light is effective for treating infections by production of ROS (especially in combination with photosensitive substances like Curcumin or Riboflavin) [14]



Nitric Oxide - Mechanisms Of Action



The Science Behind **Nitric Oxide**





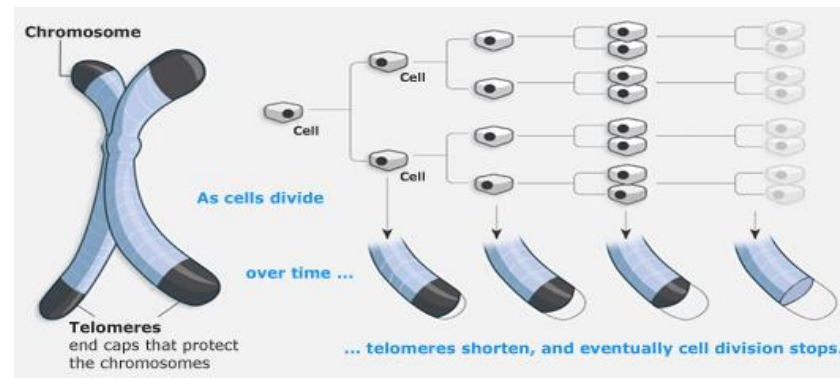
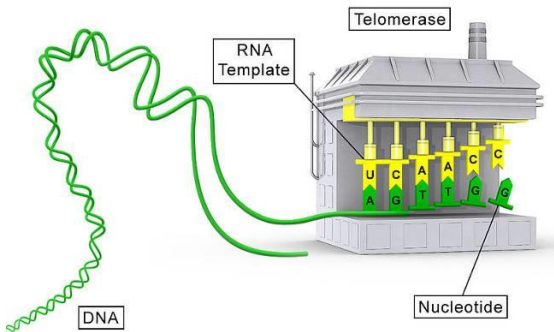
Anti-Aging Effects of Blue Light



Nitric Oxide Activates Telomerase and Delays Endothelial Cell Senescence

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

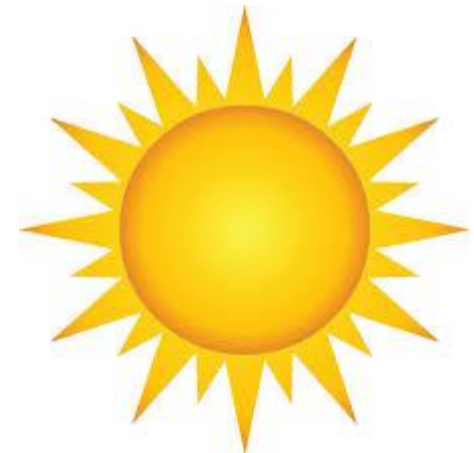
The repeated addition of the NO donor S-nitroso-penicillamine significantly reduced EC senescence and delayed age dependent inhibition of telomerase activity, whereas inhibition of endogenous NO synthesis had an adverse effect. Taken together, our results demonstrate that telomerase inactivation precedes EC aging. NO prevents age-related downregulation of telomerase activity and delays EC senescence.



Effects of Yellow Light



- Improvement of the anti-oxidant enzymatic system with detoxifying effect [50, 51]
- 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 patients
- Improves serotonin and vitamin-D production [50, 51]
- Positive effects on the hormone system [50, 51]

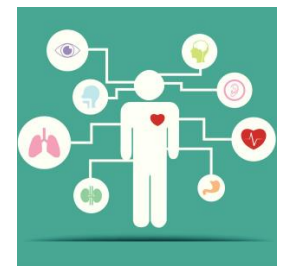


Summary: Main Effects of the Laser Watch



- Boosting cellular energy by increase of ATP synthesis
- Immune system stimulation
- Improvement of microcirculation and reduction of blood viscosity
- Activation of macrophages
- Positive effects on heart and metabolism
- Improves the function, behavior and cell elasticity of red blood cells
- Increases oxygen delivery
- Activates reparative and stabilizing pathways
- Releases Nitric oxide (NO) and activates telomerase
- Brings down blood pressure
- Reduces inflammations
- Pathogen deactivation (effective against bacteria and viruses)
- Detoxifying effects
- Positive influence on the general mood (strong anti-depressive effects)
- Improves Serotonin and Vitamin-D production
- Pain relief
- Positive effects on the hormone system
- Activation of stem cells

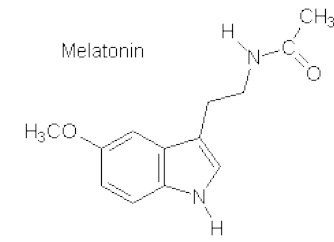
Areas of Application



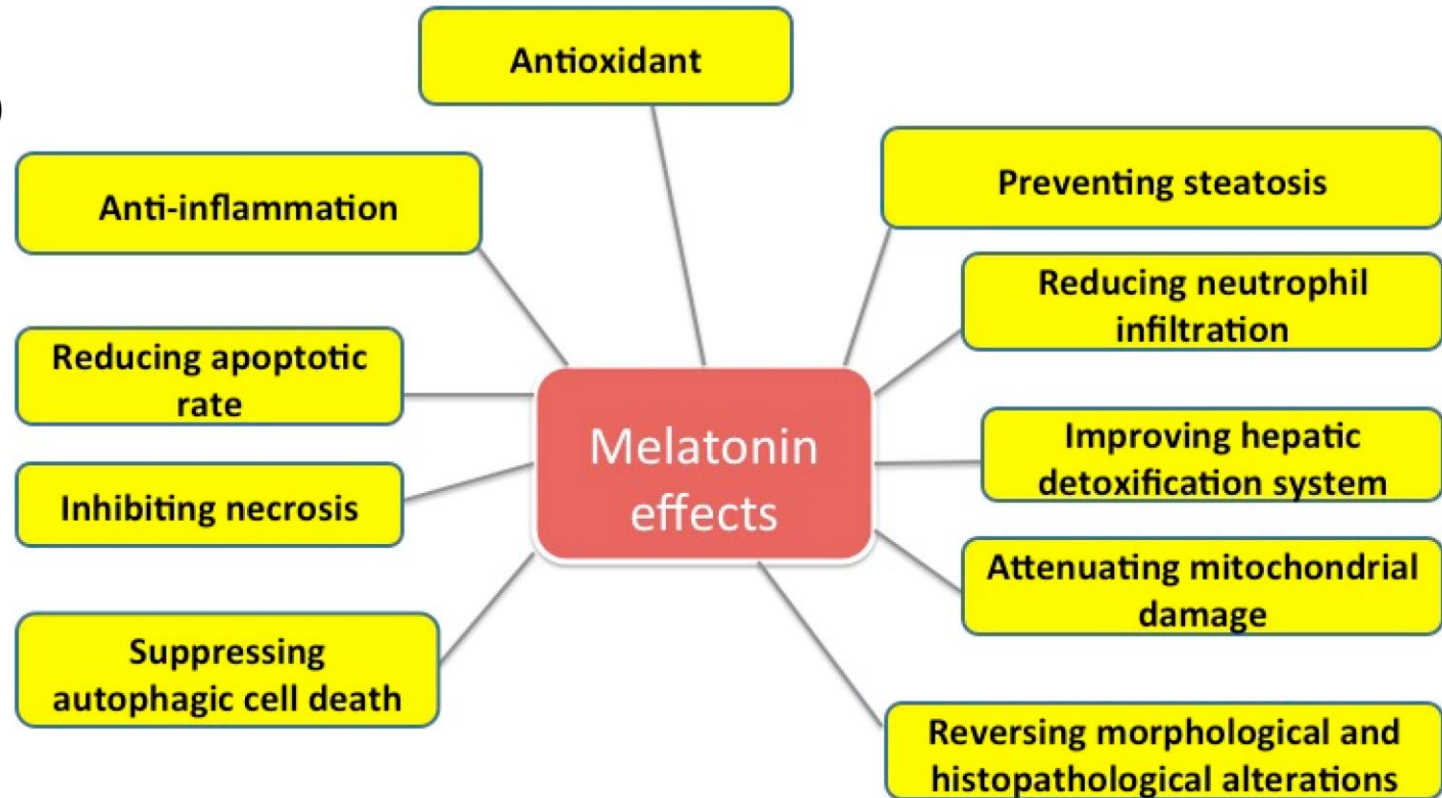
- Internal Diseases (Diabetes, chronic liver and kidney diseases)
- Metabolic disorders
- Cardiovascular diseases
- Allergies
- (Chronic) Inflammation
- Hypertension
- Auto-immune diseases
- Sleep improvement
- Prevention of jet lag and thrombosis

- Immune system strengthening
- Tinnitus
- Depression, fatigue-syndrome and burn-out
- Anti-Aging
- General performance increase (in sports)
- Additive Cancer Therapy (in combination with photosensitizing agents) and prevention

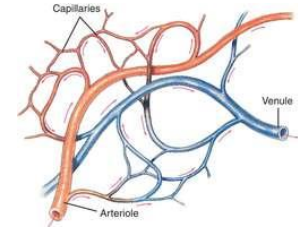
Studies (1): First Observations (Red Laser)



- Significant increase of Melatonin (30-100 %)
- Increase of Serotonin (50-100 %)
- Improved sleep quality
- Less fatigue



Studies (2): Microcirculation and ANS (Red Laser)



Daniela Litscher und Gerhard Litscher (2015): LASER WATCH – SIMULTANEOUS LASER ACUPUNCTURE AND LASER BLOOD IRRADIATION AT THE WRIST

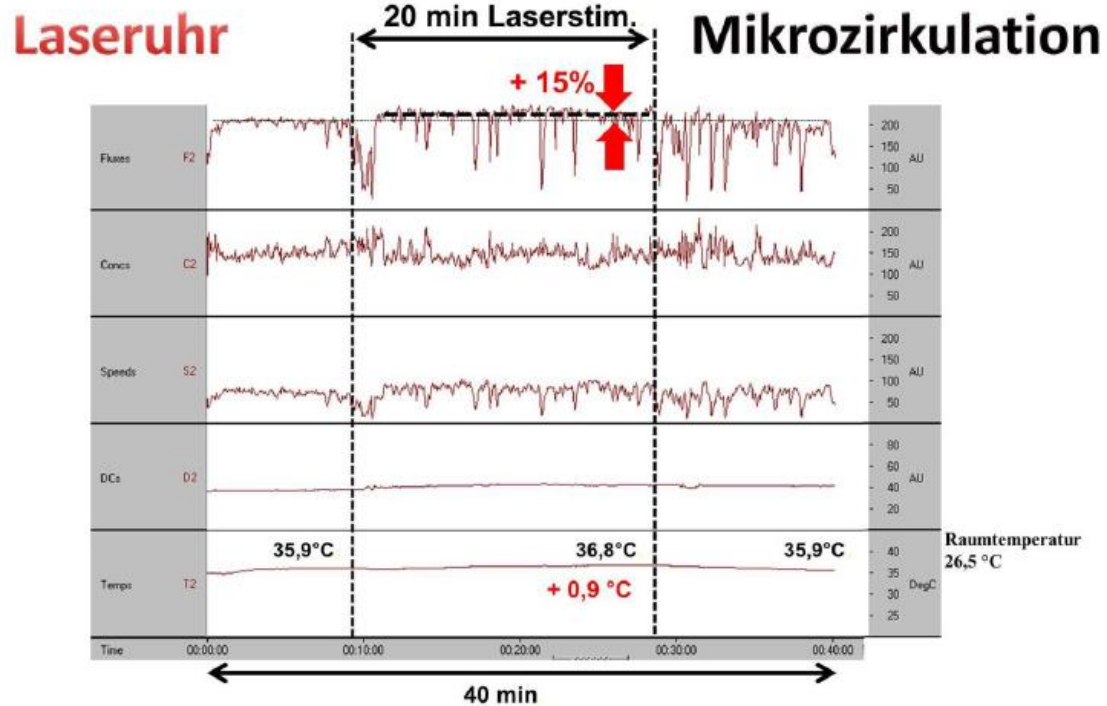


Diagram:
 Laser watch 20 minute laser stimulation Mikro-circulation
 Room temperature

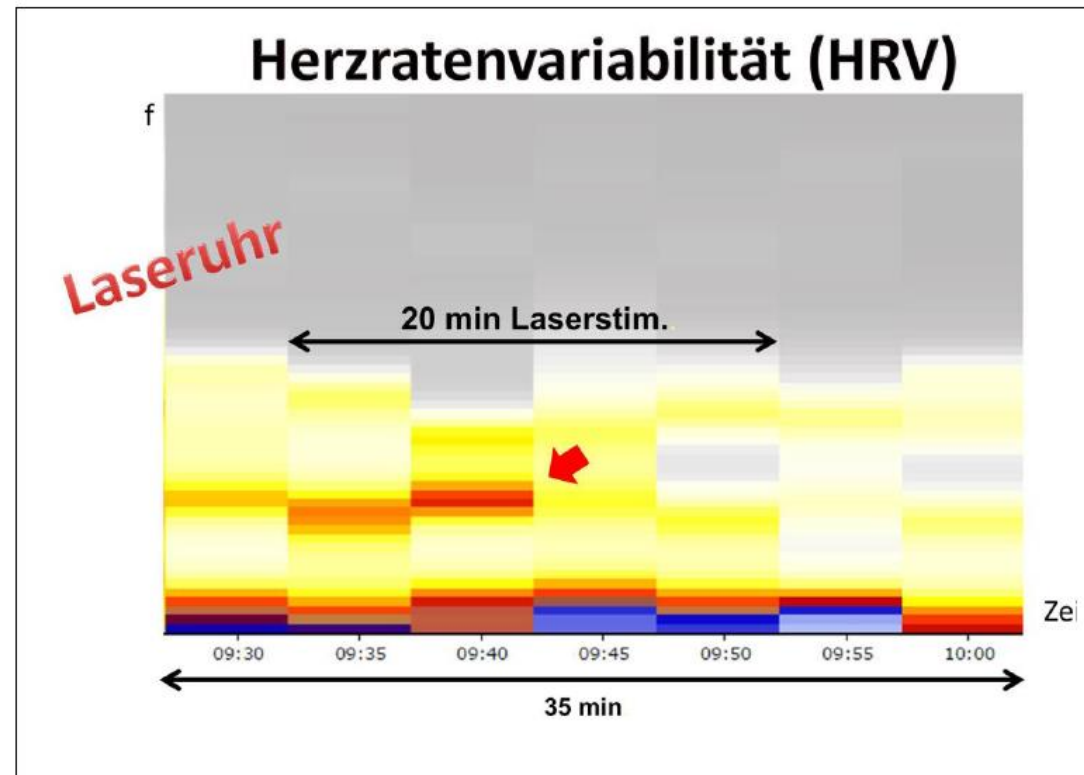


Diagram:
 Heart Rate Variability (HRV)
 Laser watch
 20 minute laser stimulation
 Time

Studies (3): Laser Acupuncture at HT7

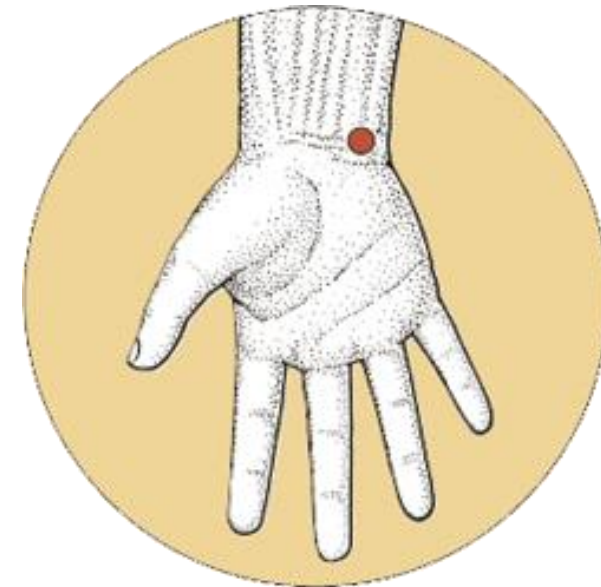


Laser Acupuncture at HT7 Acupoint Improves Cognitive Deficit, Neuronal Loss, Oxidative Stress, and Functions of Cholinergic and Dopaminergic Systems in Animal Model of Parkinson's Disease

Jintanaporn Wattanathorn^{1,2,*} and Chatchada Sutalangka^{2,3}

Department of Physiology, Faculty of Medicine, Khon Kaen University, Khon Kaen 40002, Thailand

In conclusion, laser acupuncture at HT7 can improve neuron degeneration and memory impairment in animal model of PD partly via the decreased oxidative stress and the improved cholinergic and dopaminergic functions.



Studies (4): Multi-Center Study Switzerland



Dr. med. Andreas Wirz-Ridolfi, Switzerland (2016):

- 20 patients (12 male, 8 female), Age: between 18 and 76 years
- 2 patients with type 1 diabetes
- 18 patients with type 2 diabetes
- **Red laser watch (1st generation) was used**
- **Tested on blood pressure, cholesterol and liver values**

Studies (4): Multi-Center Study Switzerland



Results: Blood pressure

Highest value:

Before: 170/90, **After:** 140/85 mmHg

Lowering of blood pressure in average:

Systolic 10,04, Diastolic 6,54 mmHg

In percentage: 7,9 %



Studies (4): Multi-Center Study Switzerland

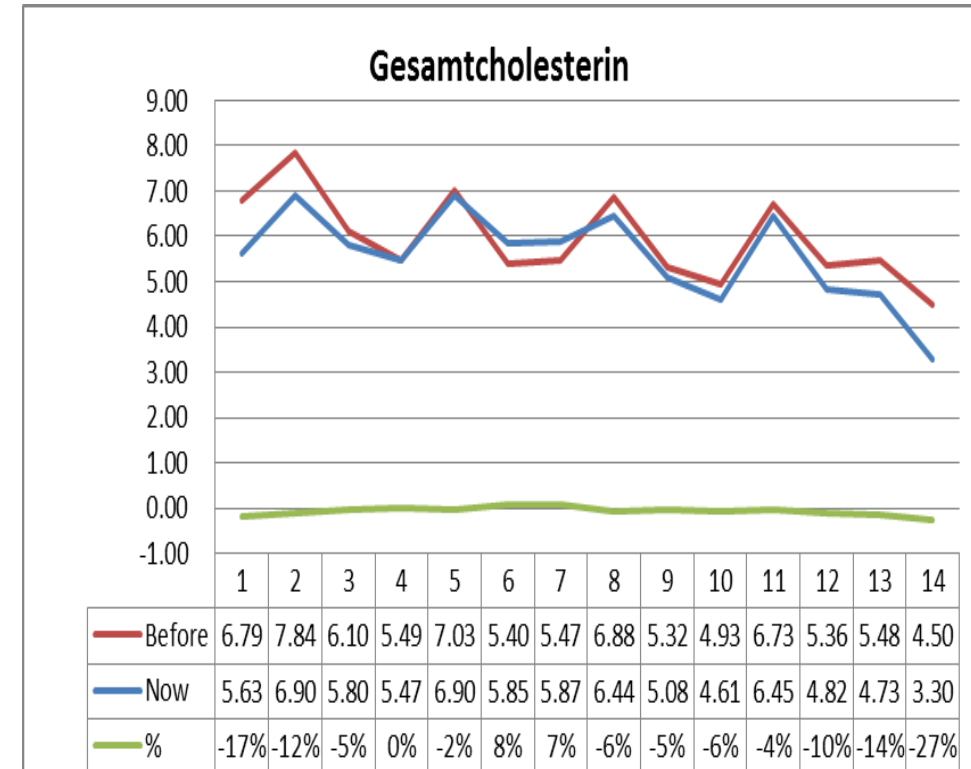


Results: Cholesterol

Average before: 5,95, After: 5,5mmol/l

Lowering in average: - 0,39 mmol/l

In percentage: - 6,6 %



Studies (4): Multi-Center Study Switzerland

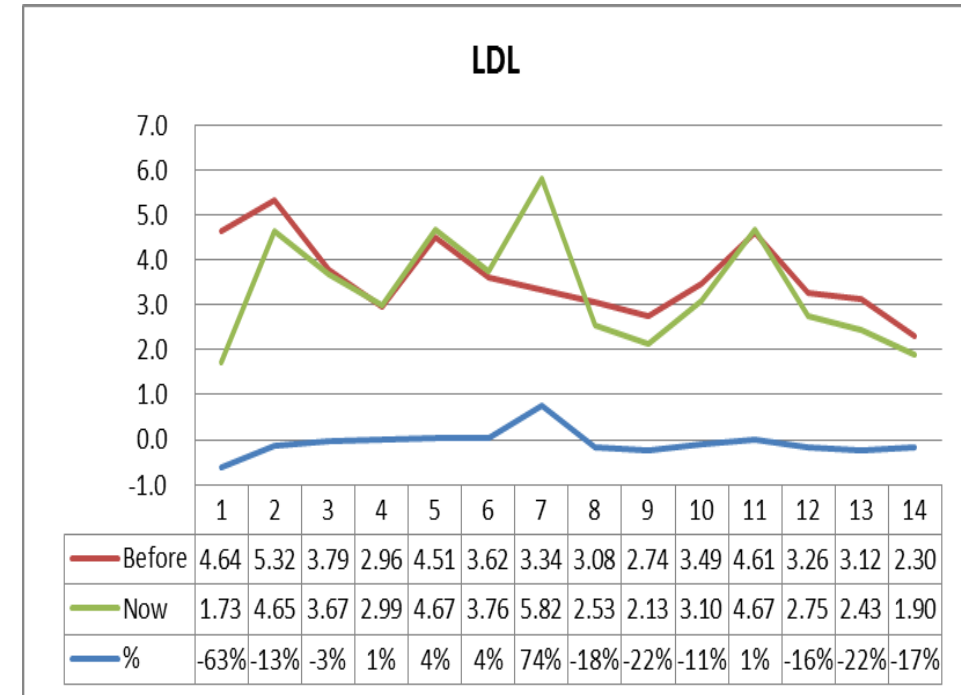


Results: Lipids (LDL)

Average before: 3,63 After: 3.34 mmol/l

Lowering in average: - 0,28 mmol/l

In percentage: - 7,8 %



Studies (4): Multi-Center Study Switzerland

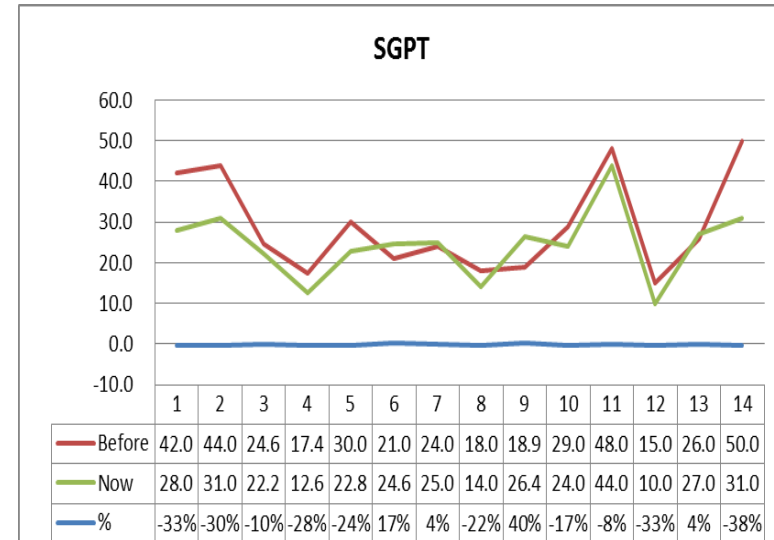


Results: Liver (GPT)

Average before: 29,14 IU/l. After: 24,47 IU/l

Lowering in average: - 4,66 IU/l

In percentage: - 16,0 %

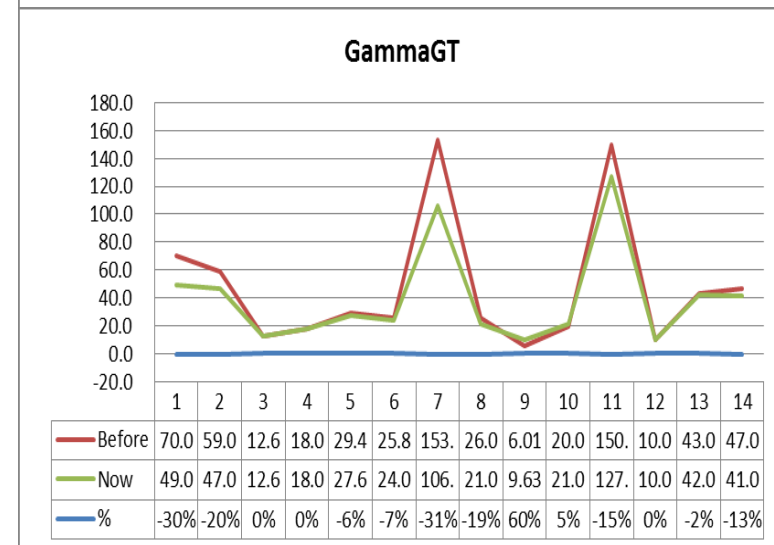


Results: Liver (GammaGT)

Average before: 47,84 IU/l, After: 39,70

Lowering in average: - 8,14 IU/l

In percentage: - 17,0 %



Studies (5): Diabetes (Case Report)

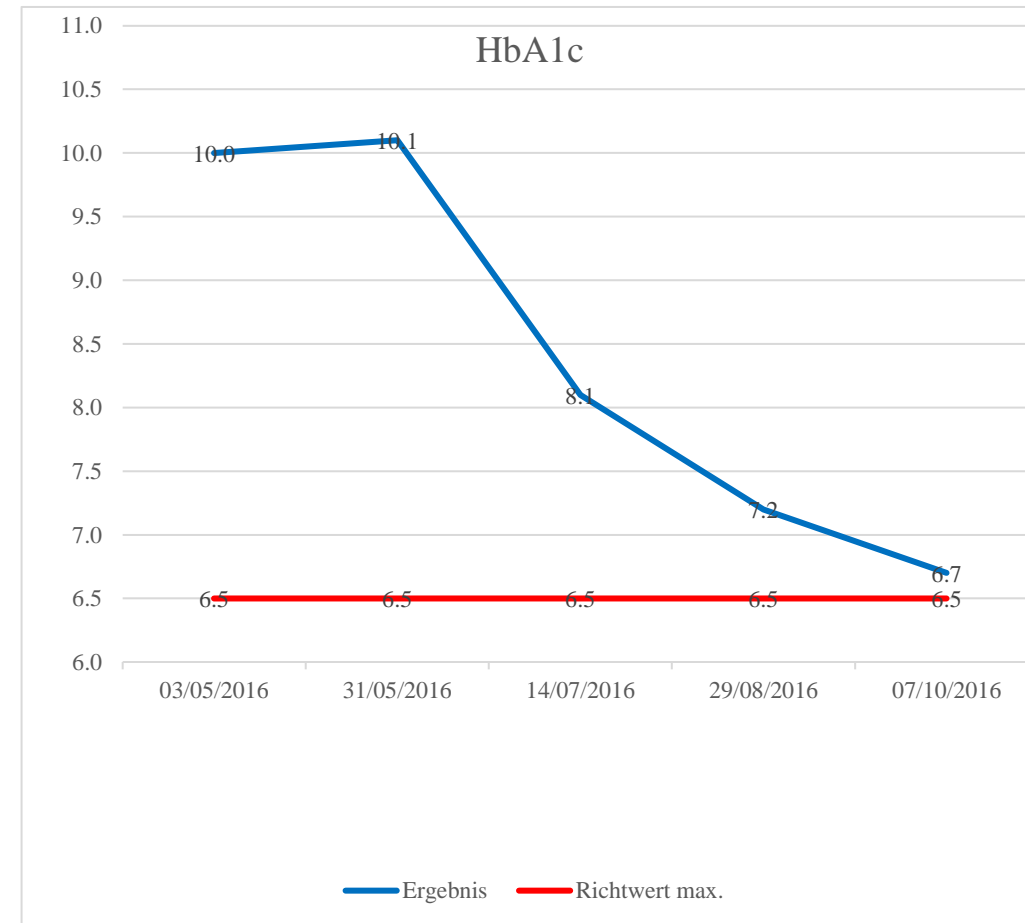


Patient, 62 years, male

Diagnosis: Diabetes Typ 2, Hypertension; regular therapy with Metformin 2 x 1000 mg, Candesartan 32 mg

Therapy with Laser Watch:

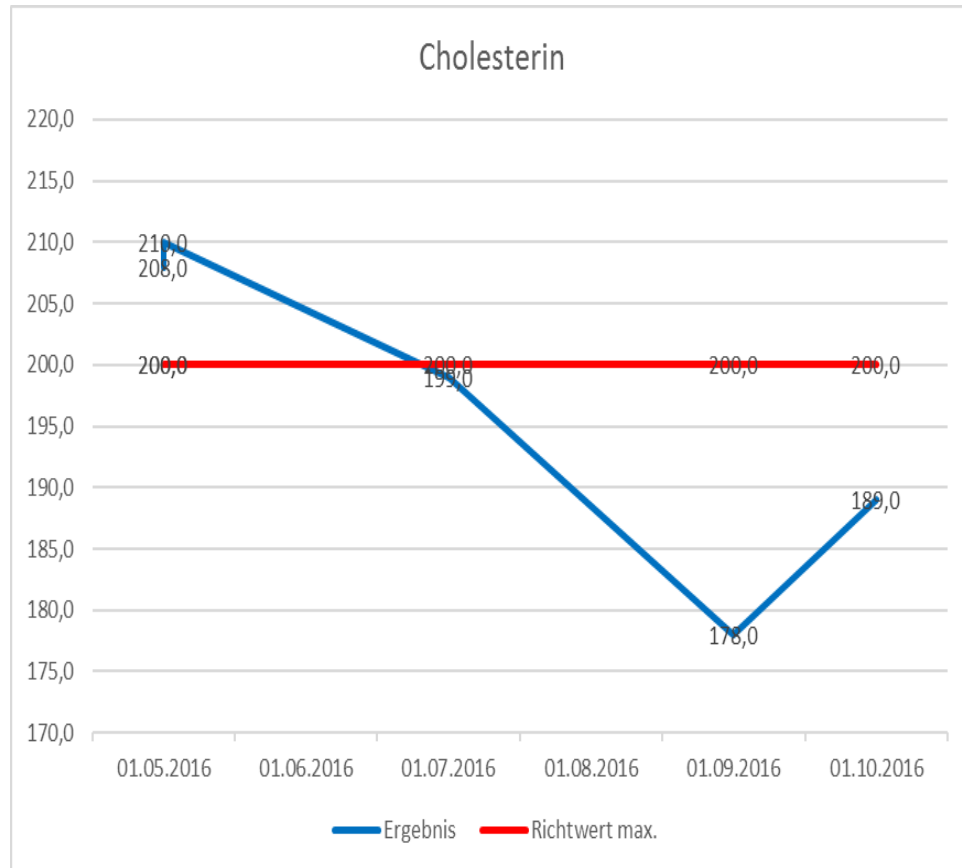
- 1) 3 month red laser watch
- 2) 3 months red-blue laser watch in combination with Curcumin (Ultracur+)



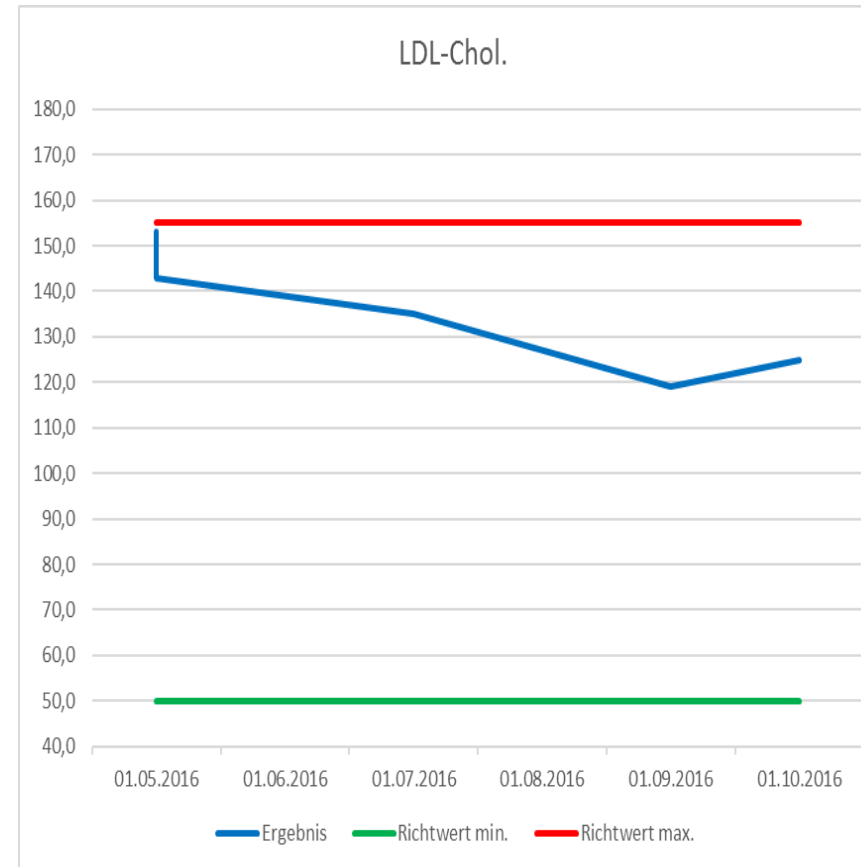
Studies (5): Diabetes (Case Report)



Cholesterol:



LDL-Cholesterol:



Case Studies Laser Watch

Pain treatment: Significant relief in pain patients



Female, 52 years old

Diagnosis: Migraine

Rapid pain relief, painkillers are no longer necessary.

Single use for 30 min.

Male, 76 years old

Diagnosis: Tension headaches

Quick improvement.

Single use for 30 min. High intensity

Female, 74 years old

Diagnosis: Carpal Tunnel Syndrome

Significant pain relief.

Multiple use for 30 min. High intensity

Male, 78 years old

Diagnosis: Shoulder pain, left

Pain is completely gone.

Three-day application for 30-60 min.

Female, 74 years old

Diagnosis: Osteoarthritis in the ankle

Significant pain relief.

Multiple use for 30 min. High intensity

Female, 63 years old

Diagnosis: TMJ Pain, Trigeminal neuralgia

Strong reaction to laser.

Single use for 10 min. Low intensity

Female, 30 years old

Diagnosis: Bursae and tendinitis in the shoulder

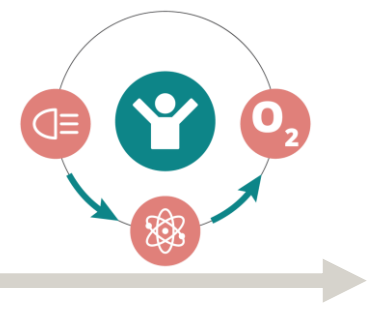
Pain and feeling of heat are completely gone.

Seven-day use, 2 times/day for 60 min.

Significant reduction in ocular tension in **glaucoma patients**

The combination of red and green light **stimulates ATP production** very effectively
→ Patients confirm to feel more active / energetic

Photodynamic Effects



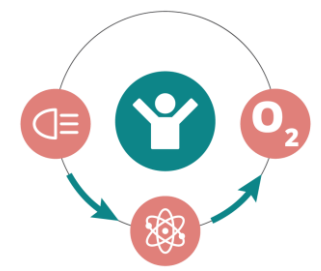
The laser watch can be combined with different light-sensitive supplements for achieving photodynamic effects, i.e. for additive cancer therapy, pathogen deactivation or prevention against cancer and infections.

Light-sensitive substances: **Chlorophyllin**, **Curcumin (Turmeric)**, **Hypericin (St. John's Wort)**, **Phycocyanin**

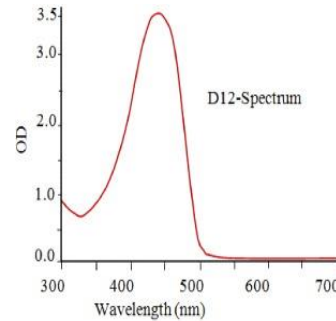
Effects:

- Prevention and treatment of metabolic diseases
- Prevention and treatment of inflammations and infections
- Prevention and treatment of autoimmune diseases
- Prevention and treatment of aging
- Prevention and support of cancer treatment

Photodynamic Effects



Curcumin with maximum bioavailability



- Curcumin absorbs blue light 447 nm
- Is a highly effective **Photosensitizer** for PDT for cancer, infectious and autoimmune diseases
- Is in low concentrations phototoxic, works as a photosensitizer, stimulates the immune system and has antitumoral, antimetastatic and antiangiogenic effects

PhotoActive+

Chlorophyllin and Phycocyanin Complex

Photoactive+ is an intelligent food supplement made from natural plant extracts. It contains water-soluble chlorophyllin and liposomal phycocyanin.

Both substances can be activated by light for photodynamic effects.

UltraCur+ Pro 4x more Curcumin than UltraCur+

Curcumin: One plant – Numerous Fields of Application

Curcumin is obtained from Turmeric and has a broad activity spectrum. It contains valuable secondary plant compounds (polyphenols). These are ideal for treating a variety of diseases - without any side effects.

There are many curcumin products on the market. Why UltraCur+Pro?

In its natural form, curcumin is hardly soluble in water. Your digestive system cannot absorb the active substances. Therefore, an excipient is required. UltraCur+Pro beinhaltet den Hilfsstoff N-Acetylcystein (NAC). In UltraCur+ we utilized a whey protein as excipient. With that formulation we already achieved a far better bioavailability than other (piperine) supplements that can be found on the market. However, we were still not fully satisfied.

For our new formulation we substituted the whey protein with N-Acetylcysteine (NAC), a synthetic chemical compound and derivative of the amino acid cysteine. NAC is an antioxidant and binds 4x more curcumin than the whey protein. In addition, NAC has anti-inflammatory and detoxifying properties.

There is no other curcumin product on the market with a better bioavailability than UltraCur+Pro.

High Quality and Sustainability

Curcumin has its origin in the Ayurvedic Medicine of India and Southeast Asia. This is where we carefully source our ingredients (Fair Trade). We guarantee gentle processing and highest quality standards to provide you with the best curcumin supplement. UltraCur+Pro is vegetarian, organic and gluten-free. It is free from artificial colors and flavors. Since curcumin is a natural active ingredient, UltraCur+Pro is well-tolerated and does not have any side effects.

Dosage

Preventive: 1 capsule/day

Therapeutic treatment: 2 capsules/day

In combination with Laser Therapy (PDT): 4 capsules/day

Application in Photodynamic Tumor Therapy (PDT)

In combination with laser therapy curcumin acts as a photosensitizer. It absorbs light in the blue range. Its absorption maximum is at about 440 nm. Even in small concentrations it acts: phototoxic, e.g. to bacteria, proapoptotic, anti-inflammatory, immune-stimulating, radioprotective, chemoprotective, antitumoral, antimetastatic, antiangiogenic, radiosensitizing and chemosensitizing.



Case Studies UltraCur+Pro

Strong anti-inflammatory effects

- Very positive effect on arthrosis (especially in combination with intra-articular blue laser therapy)
- Successful treatment of "silent inflammation"

Anti-bacterial und anti-viral effects

- Significantly shorter course in colds / infections
- Preventive effect against infections



Hepatitis B and C

- Significant reduction in viral load after photodynamic administration (intravenous blue laser)

Lyme disease

- Promising results (in combination with blue laser)

PhotoActive+ Natural Detox

What is PhotoActive+?

Photoactive+ is an intelligent supplement that contains the plant pigments chlorophyll (green) and phycocyanin (blue) which are extracted from mulberry leaves and spirulina algae. Numerous scientific studies confirm the health-promoting effects of these two pigments, which play a major role in photosynthesis.

Absorption Spectrum of Chlorophyll

As we already know, chlorophyll absorbs sunlight during photosynthesis. However, it is not able to use the complete color spectrum, but only the red (620-660 nm) and blue parts (400-450 nm). For chlorophyllin, we therefore recommend a combination with the red and blue laser.

Absorption Spectrum of Phycocyanin

The absorption spectrum of phycocyanin is at a wavelength of between 580 and 660 nm. It absorbs light in the yellow-red range and can therefore be excited by the yellow and red laser.

Best Bioavailability

The human body cannot absorb chlorophyll since it is not water-soluble. For this reason, PhotoActive+ contains two water-soluble forms of the green plant dye: Sodium-Magnesium-Chlorophyllin (200 mg/capsule) and Sodium-Copper-Chlorophyllin (100 mg/capsule). Unlike chlorophyll, phycocyanin is water-soluble and can be absorbed by the body. With the aim of achieving the highest possible bioavailability, we decided to develop a liposomally bound form of the active ingredient. The world's first liposomally bound phycocyanin! PhotoActive+ is vegetarian, organic and gluten-free. It is free from artificial colors and flavors.

Combination with Medical Laser Therapy

Even without the excitation by light, PhotoActive+ is an innovative and revolutionary active ingredient complex.

If the chlorophyllin-phycocyanin complex is additionally stimulated by laser light of certain wavelengths, it can have even stronger (photodynamic) effects.



Case Studies PhotoActive+



Strong Photodynamic Effects

- Strong anti-fungal effect (for example with nail fungus, see photos on the left: Effect after 2 treatments)
- Successful therapy of actinic keratosis (in combination with local irradiation)



References



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2. Aluani, P. (2007): Intravenous Laser Therapy: Case Reports from the Field
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