

Elmedlife, a matrix
device for non-invasive
therapeutic treatments
of the internal organs
by optical radiation

www.elmed.life

The purpose, conditions of application and potential users of elmedlife devices

A matrix device for non-invasive treatments of internal organs of the body of patients older than eighteen by pulsed infrared and red light

The conditions of application

Patient care and prophylactic institutions



At-home use



Technical foundation of the devices



The basic block of elmedlife devices is a standard light modulus that produces a flux of optical radiation. the light moduli are arranged in a matrix (treatment kit) to provide a phototherapeutic effect on the internal organs and tissues.



The device is controlled by a control unit connected with the treatment kit by a connecting cable. the control unit consists of a microcontroller with firmware and an electrical battery.



The devices are autonomous from the electrical network during a treatment procedure. one battery charge can provide 8-10 quarter-hour phototherapeutic procedures. the battery is charged by a charger connected to the 220 v, 50 hz power grid.

Elmedlife H

The device includes the following components: a helmet ELMEDLIFE H, a control unit H, and a charger. ELMEDLIFE H provides transcranial irradiation of the cortex and the subcortex zones of the brain by near-infrared and red light.

A helmet ELMEDLIFE H has eight light moduli with near-infrared light-emitting diodes (LED) and two moduli with red-light LEDs.

[MORE INFORMATION ABOUT THE DEVICE](#) 

THE FIRST

Helmet



THE SECOND

Control unit



THE THIRD

Charger



Medical indications

- ▶ Acute disorders of cerebral circulation (ADCC), including ischemic stroke consequences and brain injury
- ▶ Somatogenic depression
- ▶ Vascular dementia, atrophic

ELMEDLIFE H



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Elmedlife L

The device includes the following components: a treatment kit ELMEDLIFE L, a control unit LBM, and a charger. ELMEDLIFE L provides transcutaneous irradiation of the lungs by near-infrared light from the chest and the back sides of the body.

The treatment kit ELMEDLIFE L has nine light moduli with near-infrared light-emitting diodes (LED).

The general purpose control unit LBM is used for ELMEDLIFE L, ELMEDLIFE B, and ELMEDLIFE M devices. The LBM unit has the same indication lights and the control knob as the H unit.

[MORE INFORMATION ABOUT THE DEVICE](#) 

THE FIRST

Vest (treatment kit)



THE SECOND

Control unit



THE THIRD

Charger



Medical indications

▶ Lung fibrosis

▶ Pneumonia

▶ Bronchitis

ELMEDLIFE L



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Elmedlife B

The device includes the following components: a treatment kit ELMEDLIFE B, a control unit LBM, and a charger. ELMEDLIFE B provides transcutaneous irradiation of the nervous tissues and the blood vessels of the backbone from the neck-vertebral to the lower back of the patient.

The treatment kit ELMEDLIFE B has nine light moduli with near-infrared light-emitting diodes (LED) and one with red light LEDs.

The general purpose control unit LBM is used for ELMEDLIFE L, ELMEDLIFE B, and ELMEDLIFE M devices. The LBM unit has the same indicator lights and the control knob as the H unit.

[MORE INFORMATION ABOUT THE DEVICE](#) 

THE FIRST

Treatment kit



THE SECOND

Control unit



THE THIRD

Charger



Medical indications

▶ Osteochondrosis of the
neck-vertebral zone

▶ Osteochondrosis of the lower
back zone

▶ Osteochondrosis of the
thoracic spine zone

ELMEDLIFE B



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Elmedlife M

The device includes the following components: a monoblock ELMEDLIFE M, a control unit LBM, and a charger. ELMEDLIFE M provides transcutaneous irradiation of selected anatomy zones according to a medical prescription (treatment scheme).

ELMEDLIFE M has one light modulus with near-infrared light-emitting diodes (LED).

The monoblock can be fixed to a selected body area by lashing straps or can be kept by hand.

[MORE INFORMATION ABOUT THE DEVICE](#) 

THE FIRST

Monoblock



THE SECOND

Control unit



THE THIRD

Charger



Medical indications

▶ Lung fibrosis

▶ Pneumonia

▶ Bronchitis

▶ Osteochondrosis

▶ Arthritis, arthrosis

ELMEDLIFE M

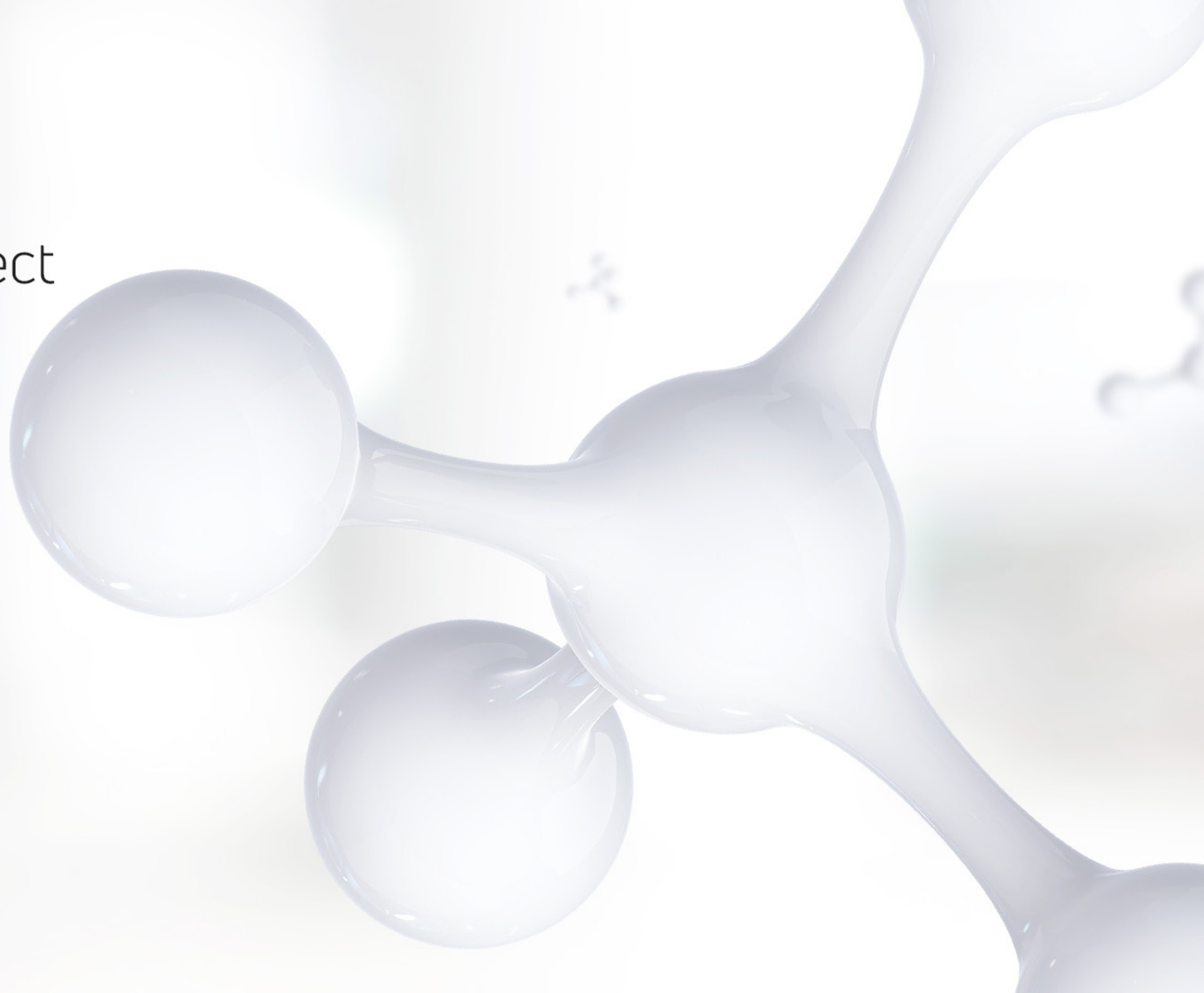


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Mechanisms of the medical effect

Red and infrared optical radiation provide the destruction of nitrosyl complexes of hemoglobin and respiratory chain enzymes of irradiated cells of the body tissues (the molecular complexes of the proteins with nitrogen oxide).

The direct consequences of these processes include broadening of the blood vessels and capillaries (the vasodilation effect of free nitrogen oxide molecules) and also boosting of the respiratory processes of the cells while the indirect consequences include increasing of ATP (adenosine triphosphate) production, decreasing of oxidative processes levels, intensification of metabolism and regeneration processes in the nervous and muscle cells.





Mechanisms of the medical effect

When putting on an ELMEDLIFE H helmet, the radiating area of the light moduli is softly pressed to the head surface. The patient's hair does not prevent the treatment procedure, but the hairstyle should not prevent an optical contact of the light moduli with the skin. Only 3-4% of an optical radiation flux reaches the cerebral cortex surface. However, an intensity of light emitted by the light moduli is high enough to provide a significant phototherapeutic effect up to the depths of 1 cm from the cortex surface. Infrared and red light stimulates regeneration of the brain neurons and cerebral circulation.

Taking into consideration that rehabilitation and quality of life restoration of stroke survivors take at least 2-3 months, the ELMEDLIFE H device is designed not only for hospitals but also for outpatient use.

It is important to note that the device can also be used for the treatment of somatogenic depressions and vascular dementia.

Mechanisms of the medical effect

When putting on an ELMEDLIFE L treatment kit, the radiating area of the light moduli is softly pressed to the body surface. A significant phototherapeutic effect is delivered to the depths of up to 5 cm for infrared radiation and the depths of up to 3 cm from the skin surface for the red light.

Irradiation of the lungs decreases levels of pro-inflammatory cytokines and transforming growth factor-beta, TGF- β . The procedure does not remove the fibrotic tissue from the lungs but rather prevents its formation and spreading. Moreover, it improves the mechanical characteristics of the lung tissues. The phototherapeutic procedures are recommended for patients who had recovered after lung diseases or were exposed to external factors that initiated the development of fibrosis, including those, who survived after acute forms of illnesses caused by the coronavirus infection.

Application of the monoblock ELMEDLIFE M together with the ELMEDLIFE L treatment kit helps to broaden and to variate an area and volume of irradiated tissues.



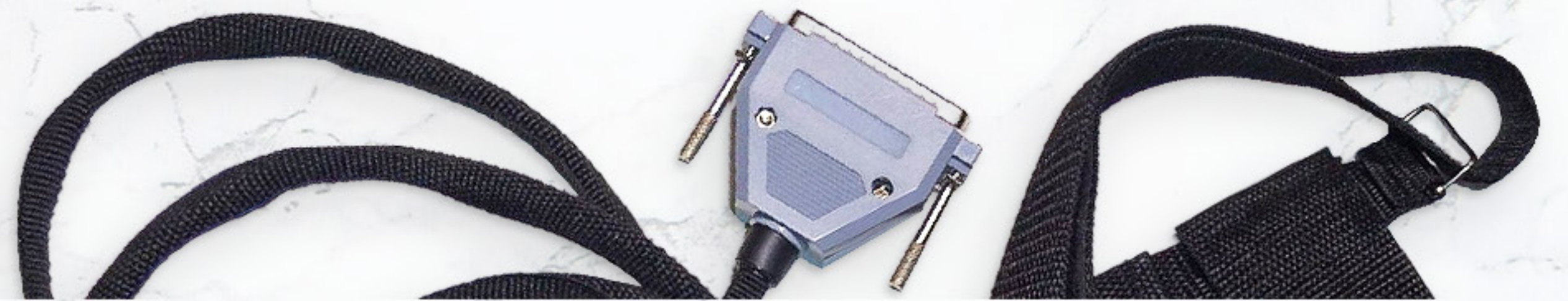


The principles of the medical effect of the devices

When putting on an ELMEDLIFE B treatment kit, the radiating area of the light moduli is softly pressed to the body surface. A significant phototherapeutic effect of infrared radiation flux is delivered to the depth of up to 5cm from the skin surface. The depth is about 1 cm for bone tissue. The effectiveness of irradiation of nervous and muscle tissues is well known from the numerous preclinical research and medical practice application. Infrared radiation provides anti-inflammatory and regenerative effects and decreases pain syndromes.

Application of the monoblock ELMEDLIFE M together with the ELMEDLIFE B treatment kit helps to broaden and to varyate an area and volume of irradiated tissues.

The monoblock ELMEDLIFE M can be applied independently.



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