



HYPERLIGHT TECHNOLOGY

PATENTED

**MEDICAL
DEVICE**

Wound Healing
Pain Treatment
Dermatological
Disorders and Skin
Problems
Seasonal Affective
Disorders (SAD)

**NON-INVASIVE
NO SIDE EFFECTS*
FOR CHILDREN
AND ADULTS***

* See Instructions For Use



**MEDICAL DEVICE
CLINICALLY
TESTED**

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TECHNICAL CHARACTERISTICS

The three models of Bioptron devices - Bioptron MedAll, Bioptron Pro 1 and Bioptron 2 - differ in size, design and settings, but are featuring identical physical characteristics of light.

- **Polarized:** >95% polarized light ensures optimal body penetration.
- **Polychromatic:** includes all beneficial effects of the whole visible and infrared radiation spectrum (wavelengths from 350 to 3400 nm for MedAll and Bioptron Pro 1 and 480-3400 nm for Bioptron 2 (excluding UV light).
- **Incoherent:** ensures a safe application.
- **Low energy:** allows precise, safe, consistent and steady dosing of light.

BIOPTRON MEDALL



BIOPTRON PRO 1 WITH TABLE STAND



BIOPTRON 2



Filter Diameter Aprox.

Bioptron MedAll	5 cm
Bioptron Pro 1	11 cm
Bioptron 2	15 cm

Power Consumption

Bioptron MedAll	28 W
Bioptron Pro 1	75 W
Bioptron 2	90 W

Rated Power of Halogen

Bioptron MedAll	20 W
Bioptron Pro 1	50 W
Bioptron 2	75 W

Weight

Bioptron MedAll (without stand)	0.4 kg
Bioptron MedAll (with stand)	1.9 kg
Bioptron Pro 1 (with table stand)	3.5 kg
Bioptron Pro 1 (with floor stand)	8.1 kg
Bioptron 2 (without stand)	4.2 kg
Bioptron 2 (with floor stand)	11.5 kg

Ambient Temperatures

Operation	+10 °C to +30 °C
Storage	0 °C to +40 °C

Wavelength

480-3400 nm with edge filter

350-3400 nm with H0 filter

Degree of Polarization

>95% (590-1550 nm)

Light Intensity

min. 10 000 lux

Specific Power Density

~ 40 mW/cm ²

Light Energy per Minute

~ 2.4 J/cm ²

CE Labelling

CE 1639



For further information
scan the QR code

BIOPTRON HYPERLIGHT THERAPY IN WOUND CARE

Our multiple clinical trials in regenerative medicine show that the use of Bioptron Hyperlight therapy enhances the processes of tissue regeneration, resulting in a faster closing of the wounds with minimal scarring. In addition, Bioptron Hyperlight Therapy and relieves the pain and inflammation during the healing process.

- venous leg ulcers ^[8, 33, 34, 44, 76]
- pressure ulcers ^[6, 8, 12, 13, 19, 31, 42]
- foot ulcers ^[21, 47, 77]
- burns ^[2, 50, 52, 83, 84]
- grafting ^[50]
- post-surgery wounds ^[5, 10, 16, 40, 46, 49, 51, 65, 66]
- injury ^[3, 5, 22, 53, 61]

In patients with pressure ulcers treated additionally with Bioptron Hyperlight Therapy, the ulcer surface and volume were significantly reduced after 4 weeks, 10 min/session, twice a day.

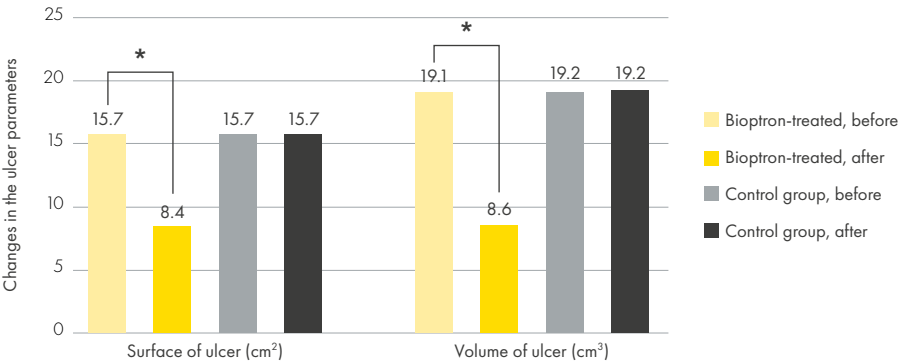


Figure 1. Changes in ulcer parameters in patients treated (n=15) and not-treated (n=15) with Bioptron Hyperlight devices (*p<0.0001 comparing before and after the treatment; Al-Kader et al, 2015) ^[6].



Photo 1. Pressure chronic ulcer treated with Bioptron 10 min/day (Patient testimonial, 2019).



Photo 2. Venous chronic ulcer treated with Bioptron 10 min/day. Between day 21 and 42 the treatment was not applied (Patient testimonial, 2019).

BIOPTRON HYPERLIGHT THERAPY IN PAIN RELIEF

RHEUMATOLOGY AND CHRONIC PAIN

Bioptron Hyperlight Therapy helps to alleviate pain and disability in patients suffering from various forms of rheumatism, in combination with other pharmacological and physical treatments:

- Decreases or relieves pain or discomfort around one or more joints
- Decreases movement-evoked pain in the affected area(s)

Bioptron Hyperlight Therapy can be used in clinics and hospitals, but it is also supportive for home use to control the pain in patients with rheumatic disease and chronic pain. Patients are able to treat themselves everyday in their own homes, even during their vacations.

The multiple clinical trials of Bioptron Hyperlight Therapy medically certified its effectiveness in patients with:

- Rheumatoid arthritis [7, 26, 35]
- Osteoarthritis [4, 43]

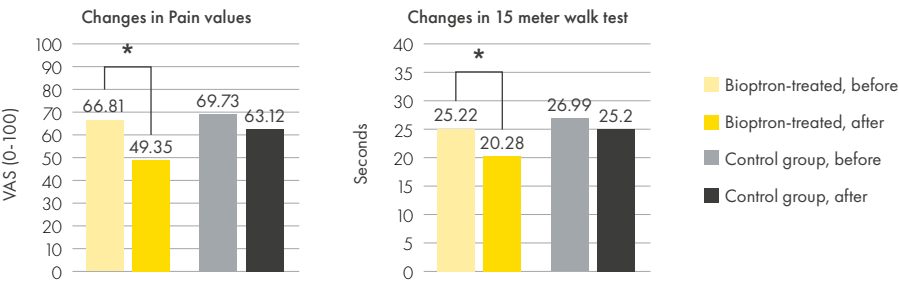


Figure 2. Changes in VAS parameters in patients suffering from osteoarthritis treated ($n=34$) and not-treated ($n=30$) with Bioptron Hyperlight devices (* $p<0.001$; Abramovich et al., 2020).

Patients treated with Bioptron Hyperlight Therapy reduced their pain values and improved their motion. Treatment during 2 weeks, 6 min/session, 5 times a week.

PHYSIOTHERAPY AND SPORTS MEDICINE

Bioptron Hyperlight Therapy is compatible with other treatment protocols, being a part of the integral interdisciplinary therapy to accelerate and optimize the rehabilitation of patients.

Bioptron Hyperlight Therapy helps the patient during the recovery period and accelerates the healing process by:

- Reducing inflammation and swelling
- Relieving pain or decreasing its intensity
- Increasing the range of motion in the affected body regions

Bioptron is used in many hospitals and clinics as a certified medical device for treatment of patients and athletes with:

- Low back pain ^(45, 64)
- Neck and shoulder pain ⁽¹¹⁾
- Carpal tunnel syndrome ^(60, 74)
- Tendinopathies in several joints ^(69, 70, 71, 72, 73, 75)
- Musculoskeletal injuries (sprains, strains) ^(58, 82)
- Post-surgery pain ⁽¹⁰⁾

Patients suffering from low back pain treated with Bioptron Hyperlight Therapy reduced their pain values and improved their quality of life significantly more than patients not treated with Bioptron. Treatment during 4 weeks, 10 min/session/day.

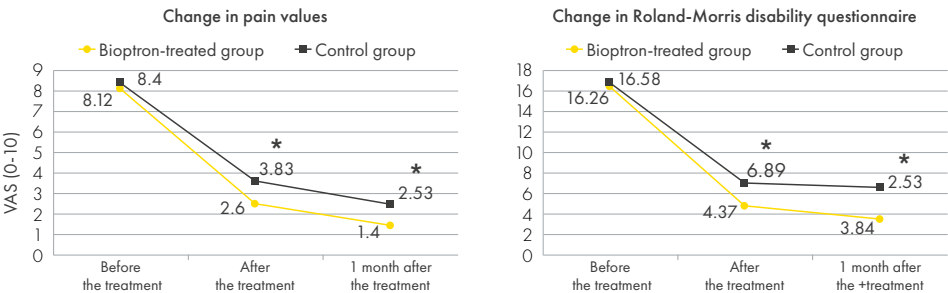


Figure 3. Changes in VAS parameter and Roland-Morris questionnaire (self-rated physical disability caused by low back pain) in patients suffering from low back pain treated (n=30) and not-treated (n=30) with Bioptron Hyperlight devices (*p<0.05; Myhailova et al, 2017).

Patients treated with Bioptron Hyperlight Therapy improved significantly their capacity to flex and declinate the body, improving overall mobility compared with patients not treated with Bioptron Therapy during 4 weeks, 10 min/session/day.

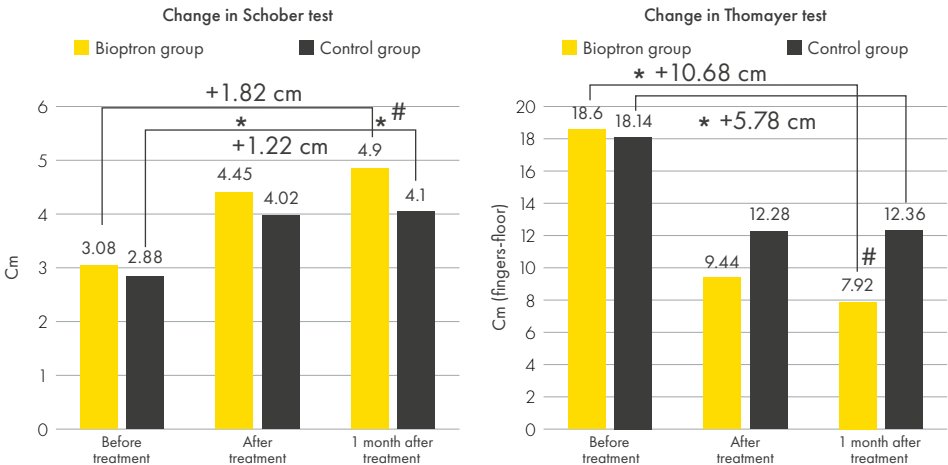


Figure 4. Dynamic of the index of Schober test (measures the flexion of the lumbar spine, in cm) and Thomayer test (measures declination of the body, finger-to-floor distance expressed in cm) for both treatment groups (Bioptron n=30; control n= 30) following the intervention and at the 1-month follow-up assessment (p<0.05 * compared to before the treatment, # compared to control group) (Myhaylova et al., 2017).

BIOPTRON HYPERLIGHT THERAPY IN DERMATOLOGY & SKIN DISEASES

Bioptron Hyperlight Therapy is easy, painless and simple, intended to promote skin healing and reduce the pain and discomfort associated with various skin disorders, by:

- Promoting the skin regeneration process
- Improving microcirculation
- Decreasing the inflammation, rashes and redness
- Relieving the symptoms

Bioptron Hyperlight Therapy can be used alone or in combination with other treatments as a part of integral treatment.

Bioptron Hyperlight devices can be used in clinics, but also by patients themselves in their homes.

The multiple synergic cellular effects of Bioptron Hyperlight Therapy could be beneficial in treatment of:

- Acne (rosacea) ^(14,29)
- Psoriasis ^(20, 57,78)
- Atopic dermatitis/ eczema ^(41, 43, 48)
- Herpes simple & zoster ^(9, 38)



Before treatment

After 10 days

After 14 days

After 26 days

Photo 3. Acne vulgaris (Bioptron Hyperlight Therapy 10 min/day) (Patient testimonial, 2019).



Pre treatment: left and right leg close ups



Post treatment

Photo 4. Eczema/ dermatitis (before and after 8 weeks of treatment, Bioptron Hyperlight Therapy 10/min day (Leguina-Ruzzi et al, 2019))

BIOPTRON HYPERLIGHT THERAPY IN SEASONAL AFFECTIVE DISORDER (SAD)

It is accepted by scientific community that SAD is caused by the lack of light, due to shorter days and decrease in sunlight exposure. The decrease in light reception will cause an imbalance in the secretion of specific neurotransmitters in the brain, affecting sleep-wake cycle and other mechanisms.

The main treatment for SAD is bright light therapy, such as Bioptron Hyperlight Therapy.^(87, 88)

Bioptron Hyperlight Therapy devices provide more than 10,000 lux (indoor light is around 500 lux; midday summer sunlight can reach 50,000 lux), ideally dosed to treat SAD.

Apply Bioptron Hyperlight Therapy pointing towards your forehead, while taking breakfast, reading the news or working on your computer, as explained in the flipchart below:

- 20-40 min. = 20 cm distance
- 40-60 min. = 30 cm distance
- 60-120 min. = 40 cm distance

BIOPTRON HYPERLIGHT THERAPY IN CHILDREN AND NEWBORNS

Bioptron Hyperlight Therapy is a safe medically certified device to be used in children and newborns.

Bioptron Hyperlight Therapy can be used in children to reduce the pain and promote healing.

Bioptron is especially useful for treatment of:

- Pediatric dermal affections⁽²⁾
- Endogenous eczema
- Upper respiratory tract infections^(36, 37)
- Allergic respiratory diseases⁽⁴³⁾
- Pediatric musculoskeletal disorders^(83, 84)

In newborns

- Dermal problems (e.g. phlebitis, decubitus, intertrigo)



Treatment of children under 6 years old must be performed under supervision of a physician.

Do not apply in eye area and use blindfold included with the device.

BIOPTRON HYPERLIGHT THERAPY IN MUCOSAL LESIONS

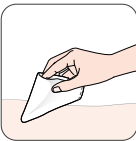
Bioptron® Hyperlight Therapy has proven its high effectiveness in a wide range of applications in oral mucosal lesions, alleviating inflammation, swelling and pain. Bioptron Hyperlight Therapy is an exceptional technology that offers an effective and economical treatment for different mucosal lesions ^(53, 54, 55, 56, 59).

HOW TO USE IT

Bioptron® Hyperlight should be used as it is described in the “Instructions For Use” brochure included with each device.

Each session of Bioptron Hyperlight Therapy lasts between 4 and 10 minutes, once or twice a day. The therapy is non-invasive. Bioptron device should be positioned at 10 cm distance from the area to be treated. Bioptron Hyperlight devices can be easily used for several patients within the same day. Bioptron Hyperlight Therapy can be used for as long as needed until the medical problem is solved.

BIOPTRON MEDALL



Step 1
Carefully clean the area to be treated.



Step 2
Set the treatment time with +/- buttons.



Step 3
Adjust the device according to your needs.



Step 4
Hold the device at 90°, at a distance of 10 cm from area to be treated.

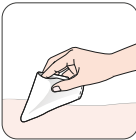


Step 5
Press Start. Relax. Light will switch off automatically at the end of countdown.

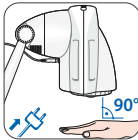


Step 6
Treat target skin areas one by one.

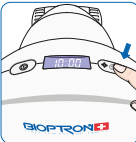
BIOPTRON PRO 1 AND B2



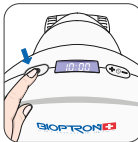
Step 1
Carefully clean the area to be treated.



Step 2
Hold the device at 90°, at a distance of about 10 cm from area to be treated.



Step 3
Set the treatment time with +/- buttons.



Step 4
Press start. Treatment starts. Light will switch off automatically at the end of countdown.

MORE ABOUT THE CELLULAR MECHANISMS TRIGGERED BY BIOPTRON HYPERLIGHT

Based on the available clinical evaluation and supporting scientific literature ^[89], the mechanism of action of Bioptron Hyperlight Therapy is understood to involve the following biological responses:

- Stimulates regenerative processes ^[31, 62, 76]
- Favorizes microcirculation ^[27, 63]
- Increases anti-inflammatory cytokine secretion and reduces the release of pro-inflammatory ones ^[24, 25, 80, 85, 86]
- Reduces the release of chemical messengers that stimulate nociceptors, boosting the release of the body's natural pain-killing agents ^[15, 63].

BIOPTRON HYPERLIGHT THERAPY TREATMENT

INDICATION FOR USE	SPECIFIC PROBLEMS/SYMPTOMS	TREATMENT	SUGGESTED APPLICATION SITES
WOUND HEALING			
Wounds after trauma or surgery	Cuts Bruises Pain around the area	2-8 min/ session, 10 cm distance 1-2 sessions/day As long as required	At the site of the trauma 
Burns	Pain around the area Tissue healing	2-8 min/session, 10 cm distance 1-2 sessions/day As long as required	At the site of the burn 
Skin grafts	Pain around the area Tissue healing	2-8 min/session, 10 cm distance 1-2 sessions/day As long as required	At the site of the skin graft 
Venous leg ulcers (stasis ulcers)	Pain around the area Tissue healing	2-8 min/session, 10 cm distance 1-2 sessions/day As long as required	At the site of the ulcer. Repeat same treatment on each ulcer if there are several. 
Decubitus (pressure ulcers)	Pain around the area Tissue healing	2-8 min/session, 10 cm distance 1-2 sessions/day As long as required	At the site of the ulcer. Repeat same treatment on each ulcer if there are several. 
Diabetic foot ulcers	Pain around the area Tissue healing	2-8 min/session, 10 cm distance 1-2 sessions/day As long as required	At the site of the ulcer. Repeat same treatment on each ulcer if there are several. 

BIOPTRON HYPERLIGHT THERAPY TREATMENT

INDICATION FOR USE	SPECIFIC PROBLEMS/SYMPTOMS	TREATMENT	SUGGESTED APPLICATION SITES	
PAIN RELIEF				
Rheumatoid arthritis	Pain in any joint of the body	4-10 minutes 10 cm distance 1-2 sessions/day As long as required	At the painful site. Repeat same treatment on each affected joint.	
Arthritis	Pain in any joint of the body	4-10 minutes 10 cm distance 1-2 sessions/day As long as required	At the painful site. Repeat same treatment on each affected joint.	
Osteoarthritis	Pain in any joint of the body	4-10 minutes 10 cm distance 1-2 sessions/day As long as required	At the painful site. Repeat same treatment on each affected joint.	
Low back pain	Pain and stiffness on the back	4-10 minutes 10 cm distance 1-2 sessions/day As long as required	At the painful site.	
Shoulder and neck pain	Pain and stiffness on the shoulder or neck	4-10 minutes 10 cm distance 1-2 sessions/day As long as required	At the painful site.	
Scar tissue	Pain	4-10 minutes 10 cm distance 1-2 sessions/day As long as required	At the scar tissue site.	
Musculoskeletal injuries	Pain	4-10 minutes 10 cm distance 1-2 sessions/day As long as required	At the painful site	
Carpal tunnel syndrome	Pain, tingling	4-10 minutes 10 cm distance 1-2 sessions/day As long as required	On the wrist	
DERMATOLOGY				
Atopic dermatitis (Eczema)	Alleviate eczema patches	4-10 minutes 10 cm distance 1-2 sessions/day As long as required	On the affected region	

BIOPTRON HYPERLIGHT THERAPY TREATMENT

INDICATION FOR USE	SPECIFIC PROBLEMS/SYMPTOMS	TREATMENT	SUGGESTED APPLICATION SITES
Acne vulgaris	Alleviate acne lesions	4-10 minutes 10 cm distance 1-2 sessions/day As long as required	On the affected region
Psoriasis	Alleviate psoriasis lesions	4-10 minutes 10 cm distance 1-2 sessions/day As long as required	On the affected region
Herpes simplex (cold sores)	Alleviate discomfort	4-10 minutes 10 cm distance 1-2 sessions/day As long as required	On the affected region
Herpes zoster	Alleviate discomfort	4-10 minutes, 10 cm distance 1-2 sessions/day As long as required	On the affected region
Superficial bacterial infections	Alleviate discomfort	4-10 minutes, 10 cm distance 1-2 sessions/day As long as required	On the affected region
Mucosal lesions (skin or oral mucosa)	Alleviate discomfort Oral mucosa: mucositis, oral pain, peri-implantitis	4-10 minutes, 10 cm distance 1-2 sessions/day As long as required	On the affected region
SEASONAL AFFECTIVE DISORDER (SAD)			
SAD	Low mood Anhedonia Increased need for sleep Severe tiredness	20-40 min. exposure at 20 cm distance or 40-60 min. exposure at 30 cm distance or 60-120 min. exposure at 40 cm distance.	With the light spot on the forehead or side of the skull. Avoid the eyes and surroundings areas
PEDIATRICS			
BLINDFOLD USE MANDATORY. ASK YOUR DOCTOR BEFORE USE			
Dermatological disorders	Such as atopic dermatitis, psoriasis, superficial bacterial infections, acne, mucosal lesions, Herpes simplex and Herpes zoster	4-10 minutes, 10 cm distance 1-2 sessions/day	At the lesion site
Allergic respiratory diseases	Such as asthma	4-10 minutes, 10 cm distance 1-2 sessions/day	On the chest

BIOPTRON HYPERLIGHT THERAPY TREATMENT

INDICATION FOR USE	SPECIFIC PROBLEMS/SYMPTOMS	TREATMENT	SUGGESTED APPLICATION SITES
Infections of the upper airways	Such as common cold, sinus infections and tonsillitis	4-10 minutes, 10 cm distance 1-2 sessions/day	On the chest 
Minor injuries	Wounds, bruises, rashes, edema, redness and burns	4-10 minutes, 10 cm distance 1-2 sessions/day	At the lesion site 
Muscle and joint disorders	Such as juvenile arthritis	4-10 minutes, 10 cm distance 1-2 sessions/day	At the lesion site 
Sports injuries	Such as sprains, strains, contusions, tendonitis, ligament and muscle tears	4-10 minutes, 10 cm distance 1-2 sessions/day	At the lesion site 
ADDITIONAL INDICATIONS FOR NEWBORNS:			
Dermal affections	Such as intertrigo (diaper rash), omphalitis (infection of the umbilicus) and pustular rash	4-10 minutes, 10 cm distance 1-2 sessions/day	At the lesion site 

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