



# BIOPTRON HYPERLIGHT THERAPY IN AESTHETICS & COSMETICS

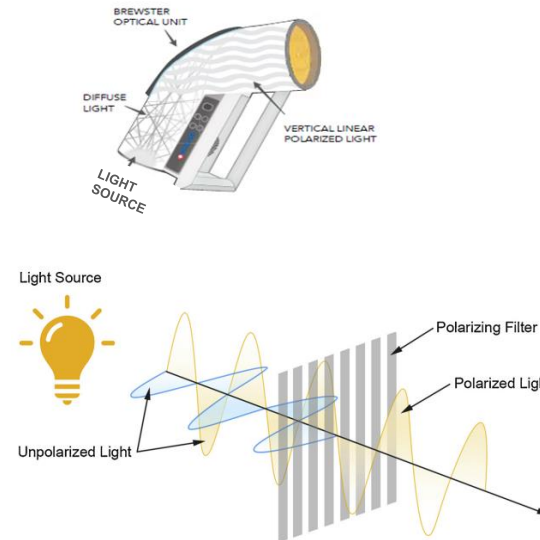
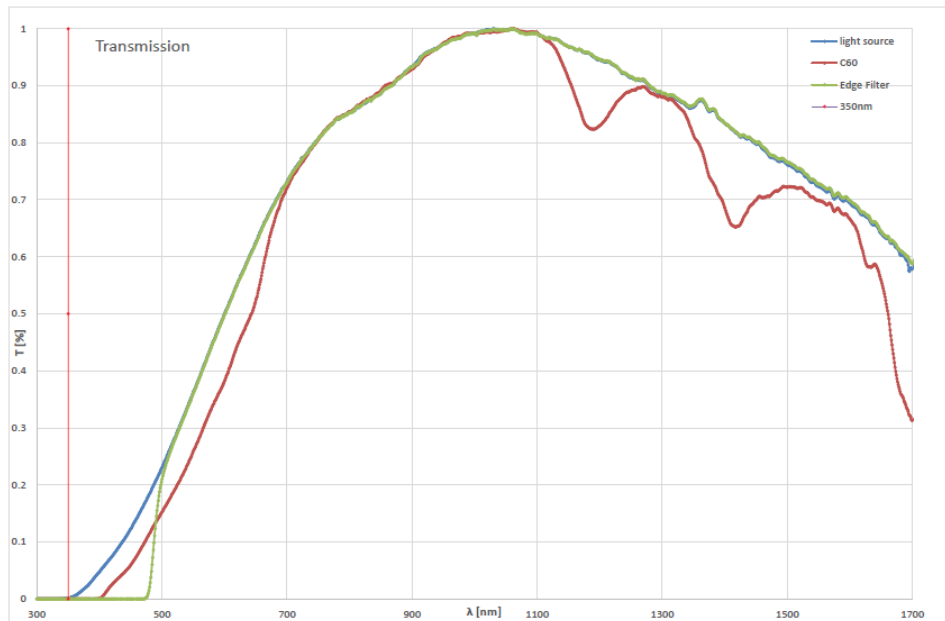
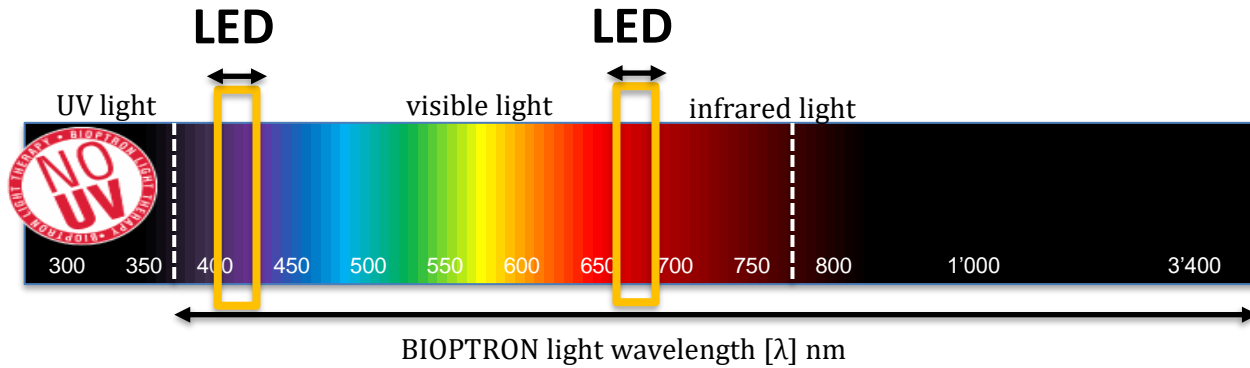


Swiss-made, patented technology

2022

Ezgi Kalay MD, Medical Advisor of Bioptron AG

# Properties of Bioptron



**Polarized:** 95% of polarization, ensures optimal penetration of tissues to stimulate.



**Polychromatic:** Contains the visible light and a part of the infrared spectrum (350 to 3400 nm) *Does not include UV.*



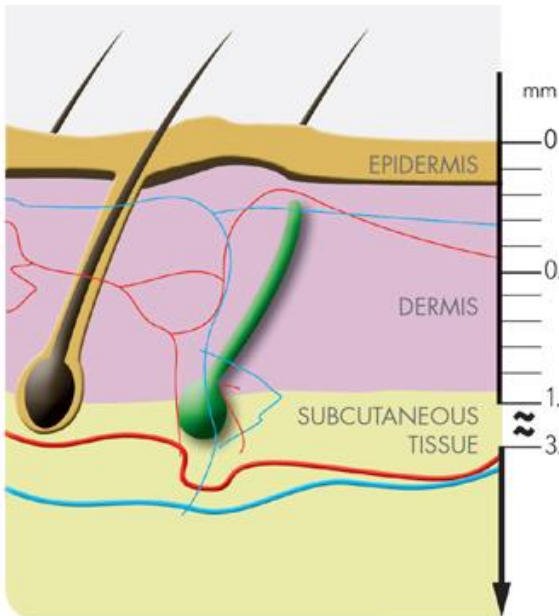
**Incoherent:** Dynamic penetration without the risk of damaging the tissue as coherent light.



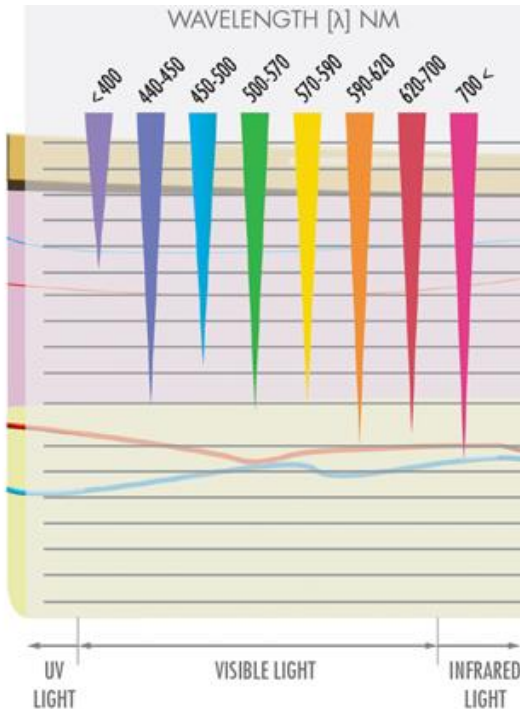
**Low energy:** Consistent intensity of 2.4J /cm<sup>2</sup> per minute safe and precise dose.

# Mechanism of action

## Cross section of skin



## Penetration of Bioptron



## ➤ Cellular metabolism↑

Changes in the lipid bilayer, membrane surface charges, lipid-protein interaction<sup>1</sup>  
 Mitochondria stimulation, augmented cell energy and nucleic acid production<sup>2</sup>

## ➤ Microcirculation↑

VEGF production↑<sup>3</sup>, neoangiogenesis↑<sup>5</sup>

## ➤ Production of specific cells and proteins↑

Fibroblast stimulation, expression of type1 procollagen mRNA↑<sup>4</sup>  
 Keratinocyte proliferation↑<sup>6</sup>  
 Growth factors↑<sup>11</sup>, collagen synthesis↑<sup>6</sup>

## ➤ Regulation of inflammation↑

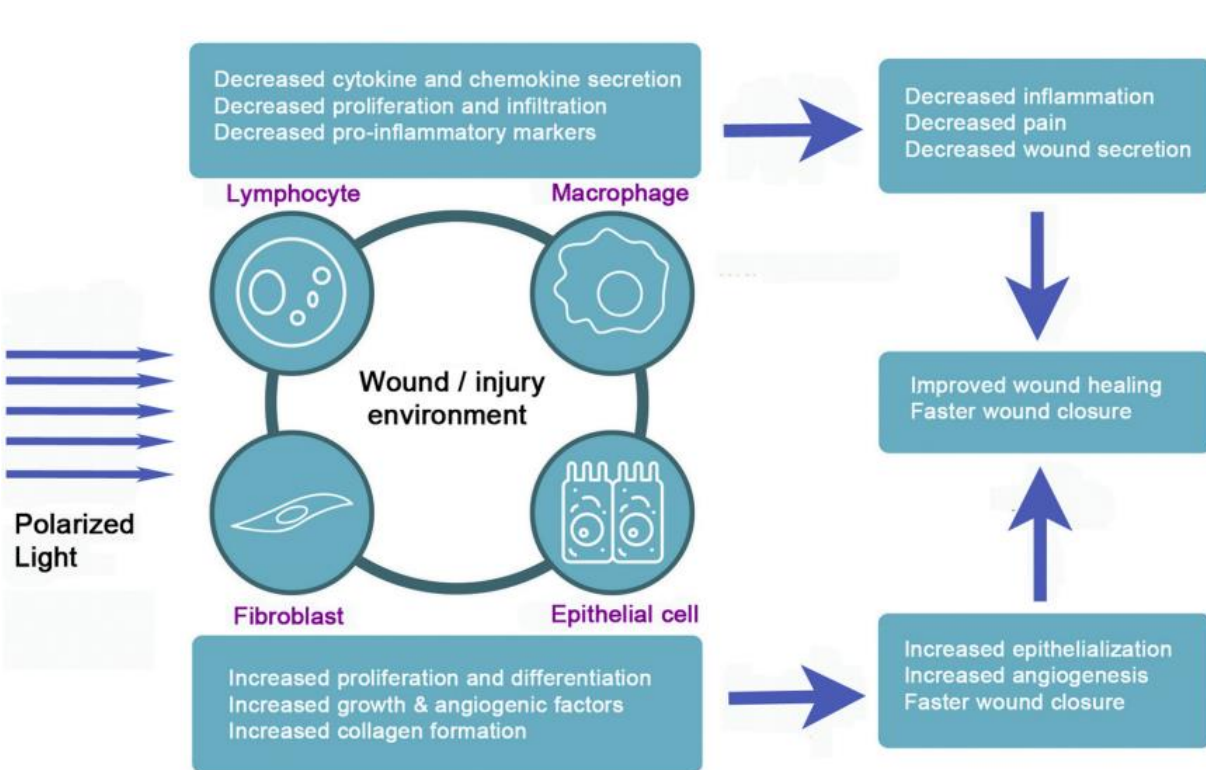
Th lymphocyte proliferation↑<sup>7</sup> IgM and IgA↑<sup>9</sup>  
 Anti-inflammatory cytokine↑ Pro-inflammatory cytokine↓<sup>8</sup>

## ➤ Nociceptive signals↓

Pain receptor activation↓ NO synthesis↑<sup>10</sup>

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# Bioptron hyperpolarized light in wound healing



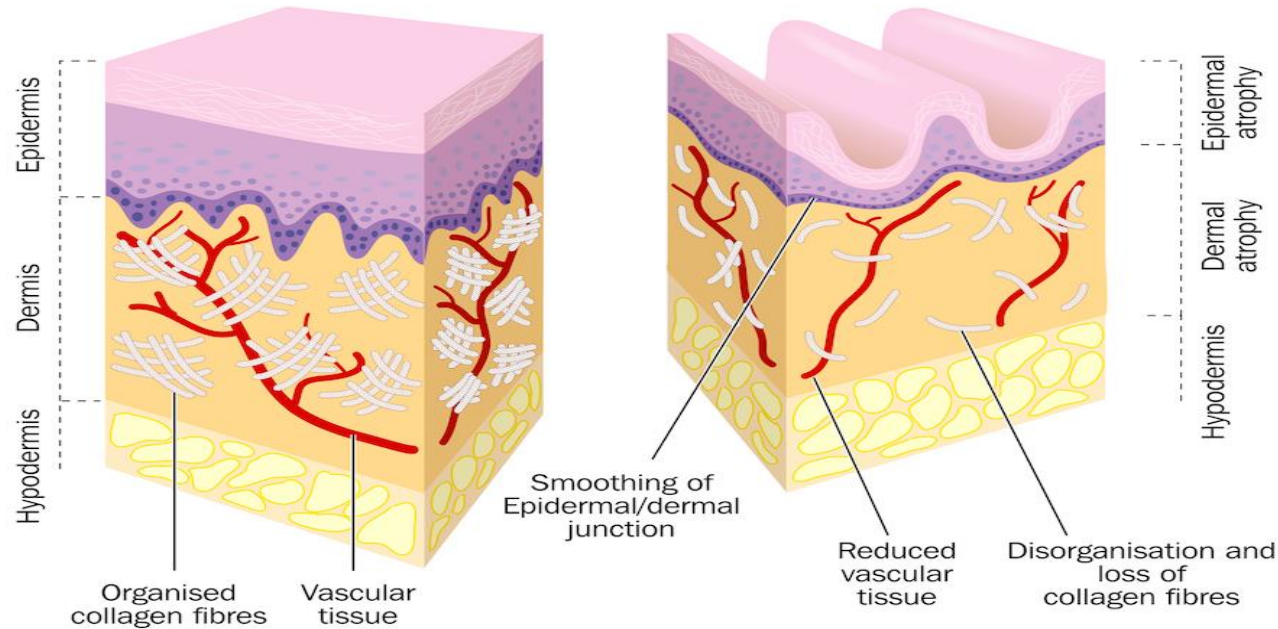
## Deep dermal burn<sup>1</sup>



- Reduced need for surgery
- Accelerated wound healing
- Reduced scars and contraction
- Reduced hospital stay
- Better functional and aesthetic results

# Bioptron hyperpolarized light in aesthetics & cosmetics

## Natural skin changes by time



Fibroblast stimulation<sup>1</sup>↑  
 Angiogenesis<sup>2</sup>↑  
 Collagen production<sup>3</sup>↑

## Use after blepharoplasty<sup>4</sup>

Side treated with Bioptron



Control side

## Use after face-lift<sup>4</sup>

Side treated with Bioptron



Control side

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# Indications of Bioptron Hyperlight Therapy

Bioptron Hyperlight Therapy is **medically certified** in the treatment of:

## Wound healing

- Injuries and traumas
- Post operational wounds
- Burns and grafts
- Venous leg ulcers (stasis ulcer)
- Pressure ulcers (decubitus)

## Pediatrics

- Juvenile rheumatic arthritis
- Upper respiratory tract infections
- Allergic respiratory diseases
- Neonatal dermal affections as intertrigo, omphalitis, pustular rash

## Pain

- Rheumatoid Arthritis
- Osteoarthritis
- Low back pain
- Shoulder and neck pain
- Scar tissue
- Musculoskeletal injuries
- Carpal tunnel syndrome
- Muscle spasm
- Ligament and muscle tear
- Tendonitis, epicondylitis

## Dermatological disorders

- Atopic dermatitis
- Psoriasis
- Herpes simplex & Herpes zoster
- Superficial bacterial infections
- Acne
- Mucosal lesions
  
- Seasonal Affective Disorder

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Bioptron Hyperlight Therapy is tested in a variety of **clinical studies** in different indications.

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# Thank you for your time and attention



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Swiss-made, patented technology