

PowerLight
LED Light Therapy

The FUTURE of corrective skin
care.....TODAY

LED facial treatments

- Effective when used with correct protocols
- Non thermal stimulation of collagen
- Increases circulation and lymphatic drainage
- Enhances effectiveness of other procedures
- More effective with certain topicals
- Great anti-inflammatory in the red/near infrared wavelengths
- Effective acne treatment in red/blue wavelengths

What can LEDs DO

- Create fresh, younger looking complexion
- Fill in fine lines and wrinkles
- Reduce edema and erythema
- Treat acne
- Counteract UV damage: wrinkles
- Moisturize dry skin
- Can be used on all skin types

What LEDs can NOT do *alone*

*(but **CAN** with help from other procedures)*

- Treat hyperpigmentation
- Treat broken capillaries
- Work on 100% of your clients
- Give immediate results in most clients

Definitions

- Nanometer (nm) , indicates wavelength or color (660nm, 950nm,420nm, 480nm)
- Milliwatts (mw) is a measure of power output
- Joule is a measure of energy of light
- Joules per square centimeter (j/cm^2) is a dosage measurement ($4\text{j}/\text{cm}^2$ in 90 secs)
- Frequency is the number of pulses per second (Hz, hertz) (20, 292, 5000)

Treatment Protocols

- LEDs can be used every day without concern
- Optimally, treatments should be done once a week with home care topical use everyday
- Enhanced effects can be seen with 2X-3X week treatments, especially with inflammatory skin conditions
- Maintenance treatments should be done every month to 6 weeks after initial 6-8 treatments
- For collagen production, the optimal dosage is recommended to be at least $4\text{j}/\text{cm}^2$, $6\text{-}8\text{j}/\text{cm}^2$
- Multiple pulse (frequency) patterns in one session are more effective

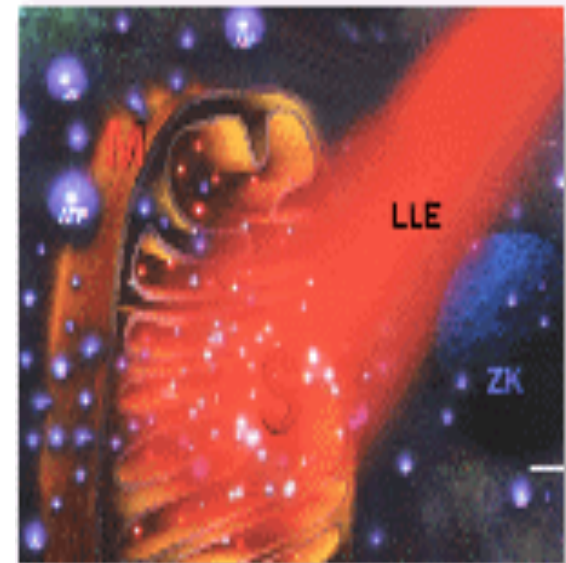
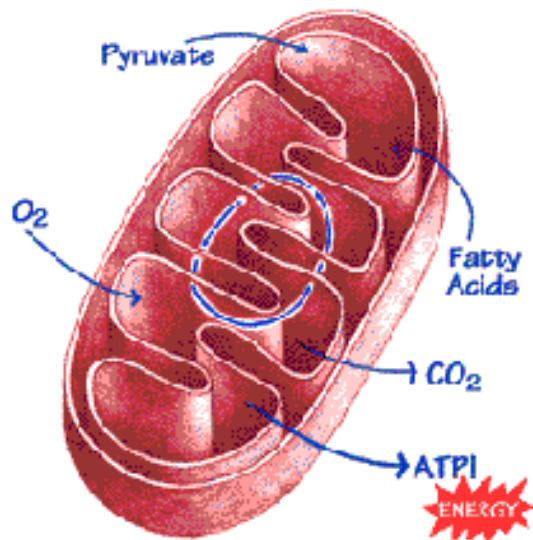
LED effectiveness

- LED treatments have a clinically effective dosage range..... $4\text{j}/\text{cm}^2$ to $8\text{j}/\text{cm}^2$ to achieve collagen production
- Pulsed frequencies have shown therapeutic effects: Nogier/Bahr frequencies
- Combine red and blue wavelengths for more effective acne treatment

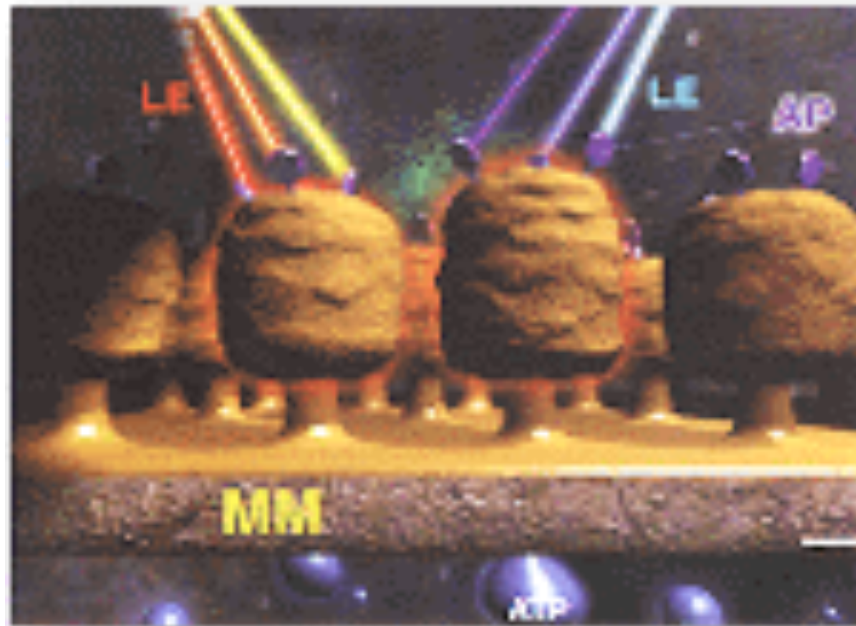
Photon absorption not thermal damage

- Unlike IPL and other thermal injury treatments, LEDs cause absorption of energy in the form of photons from light
- Similar in many ways to vitamin absorption
- They cause a cascade of antioxidant enzymatic activity in the cell
- Latest studies show gene stimulation that leads to natural collagen and elastin production

Mitochondria are stimulated by monochromatic light energy



Photons attach to chromospores



NASA's Scientists Use LEDs

To:

- Heal wounds in space and on earth
- Speed up recovery of musculoskeletal injuries in NAVY seals
- Treat hard-to-heal sores on cancer patients and diabetics
- Chosen over LASERS due to safety and cost

NASA LED Program

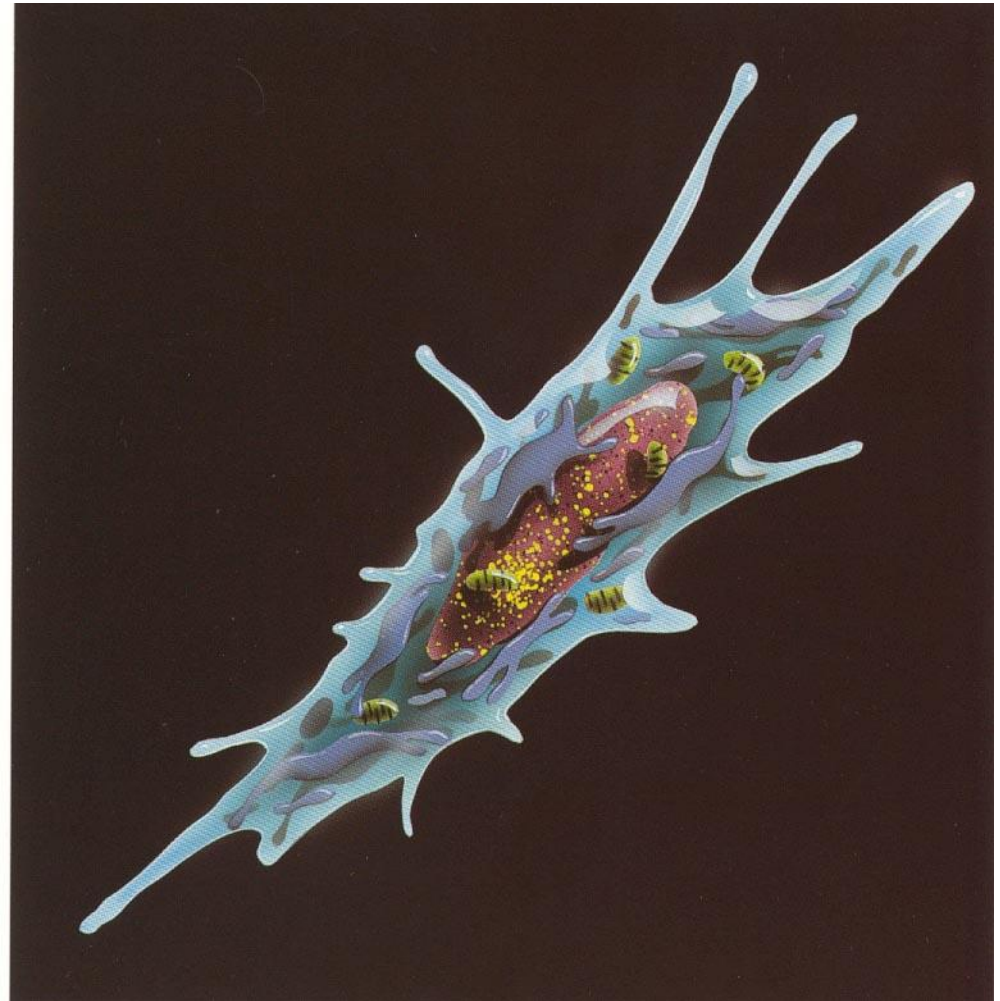
- Studies show **200% increase in human collagen synthesis** over control group
- Growth rate of **fibroblasts increased 50-75%** over control group two to three days after exposure
- Discovered the effect of near infrared light on gene expressions in human tissue

Monochromatic Red and Near Infrared Light

- Increases Oxygen and Blood Flow
- Stimulates antioxidant enzyme release
- Facilitates pain reduction
- Promotes muscular relaxation
- Stimulates fibroblast, collagen production
- Increases lymphatic drainage

Fibroblast

- Fibroblast/Fibrocytes are the most common cells of the connective tissues
- Elastin-elastic fibers give skin the **ability to stretch and move**
- Their production is dependent on **fibroblasts**



By increasing fibroblast production, we are strengthening the width and quality of the connective tissues

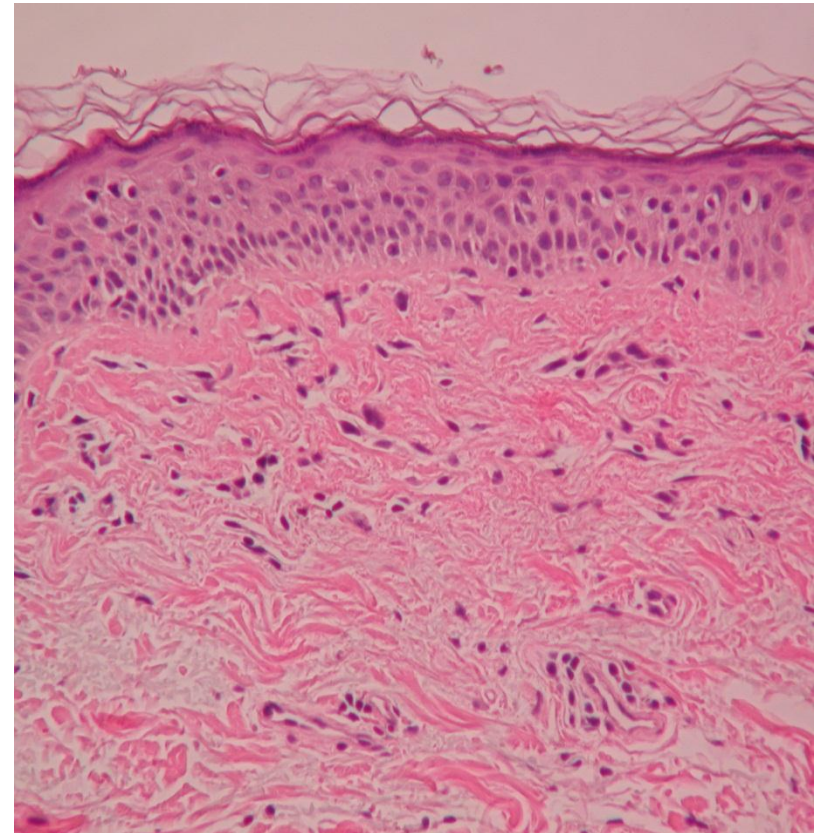
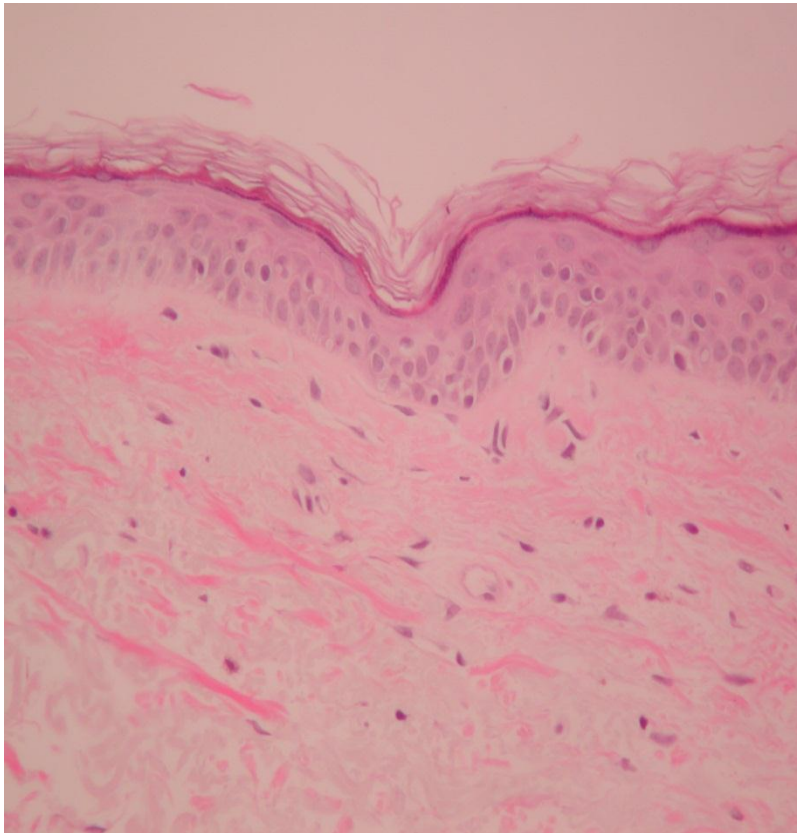
New Capillary Growth

- LED red/infrared therapy increases vascularity by **creating new capillaries**
- New capillaries start as outgrowths of endothelial cells
- Recent studies show **angiogenesis** (new blood vessel formation) is **related to fibroblastic activity**

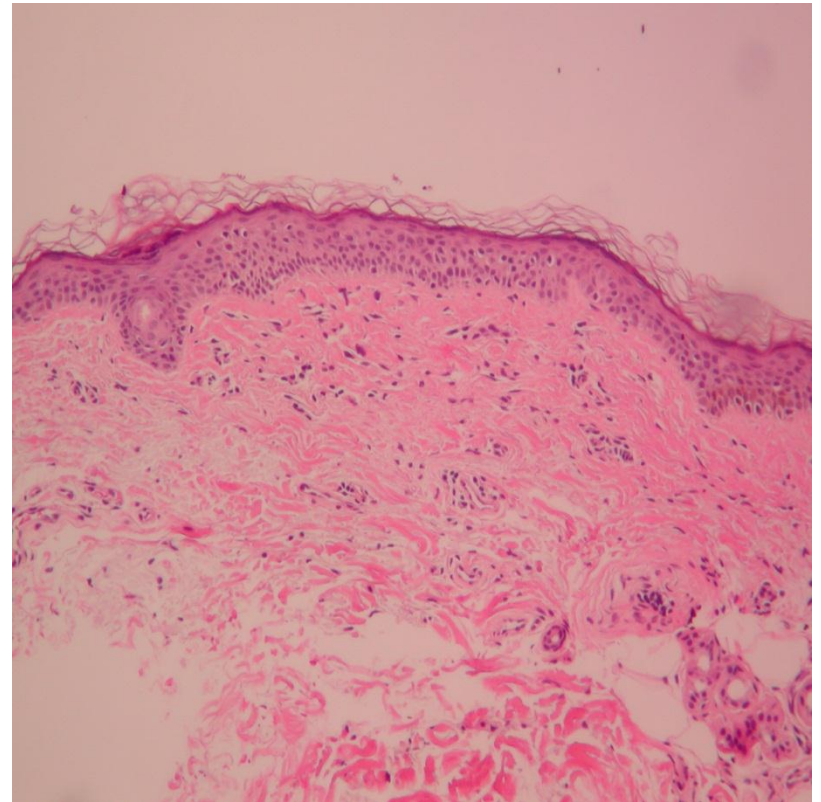
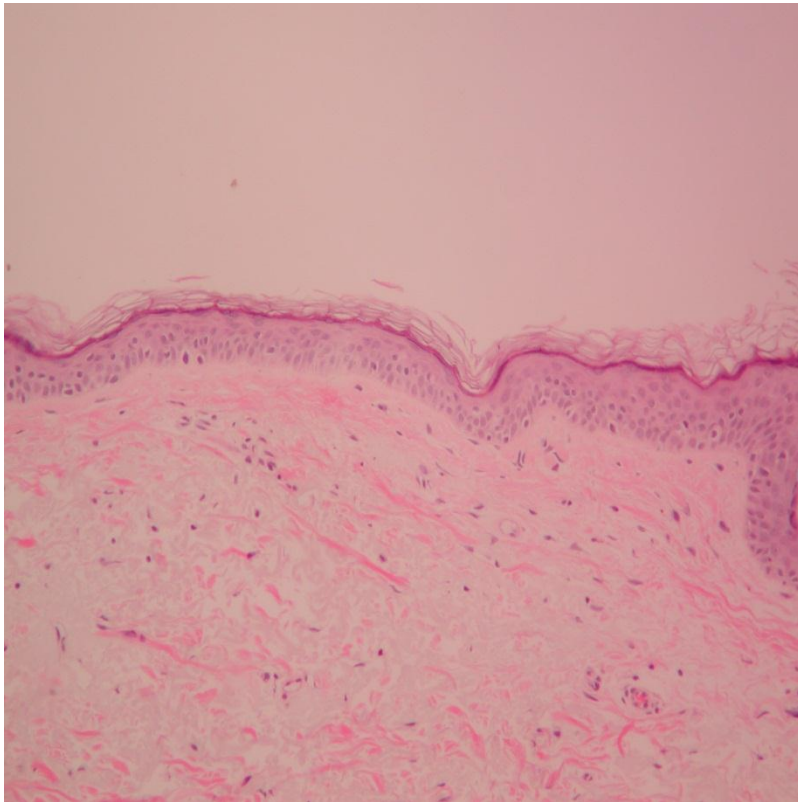
New Capillary Growth



Biopsy results after 2 treatments at $4\text{J}/\text{cm}^2$ - 3 minutes total exposure



Biopsy results after 2 treatments at $4\text{j}/\text{cm}^2$



Treating Acne

Treatment with LEDs target all the conditions associated with acne:

- Infection (*p. acnes* bacteria)
- Inflammation
- Wounding

Treating Acne with LEDs

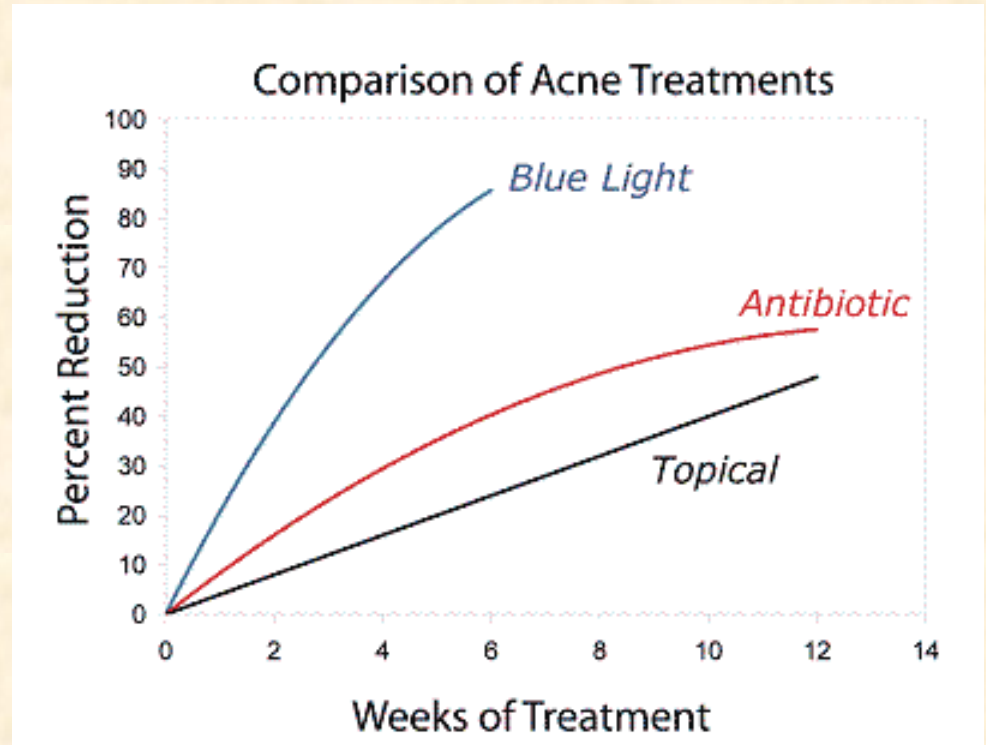
- Blue light is an antibacterial
- Blue light sits on the surface and kills bacteria near the surface
- Red/near infrared light penetrates deep to reduce the inflammation associated with the infection, esp. with cystic acne
- Topical salicylic acid can be used to help treat inflammation

Why Use Blue & Red Light Phototherapy to Treat Acne?

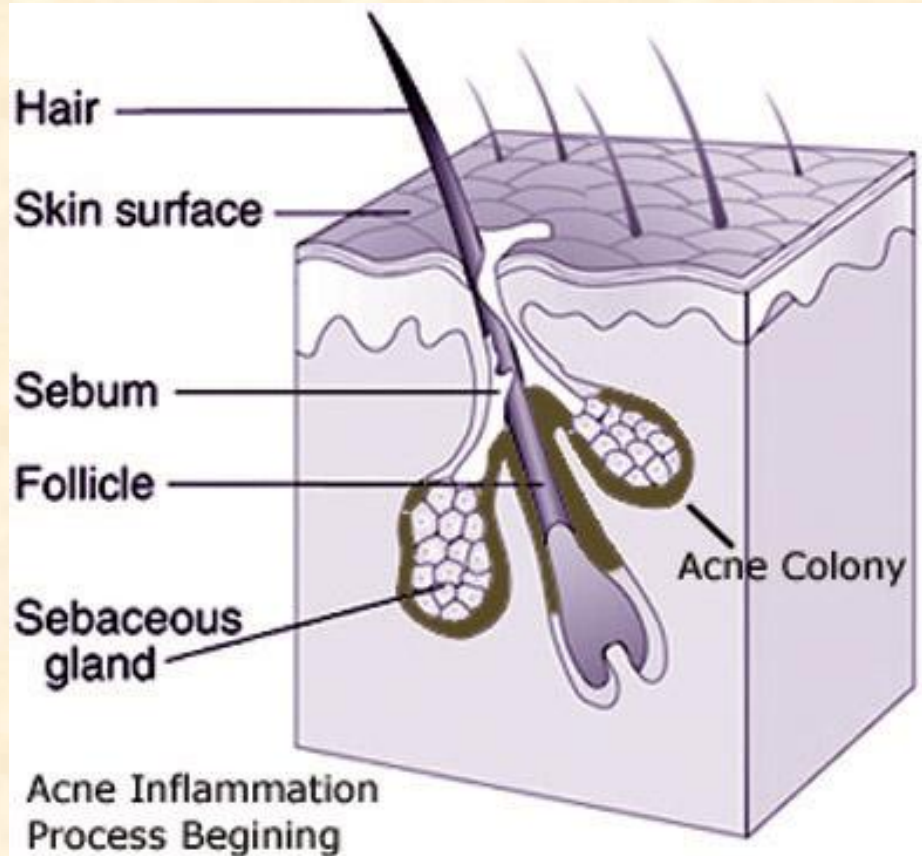
Blue light reacts with acne molecules to kill bacteria.

Red Light improves blood flow and promotes healing.

Power Light phototherapy produces **better results** in a **shorter time** with antibiotics or topical treatments.



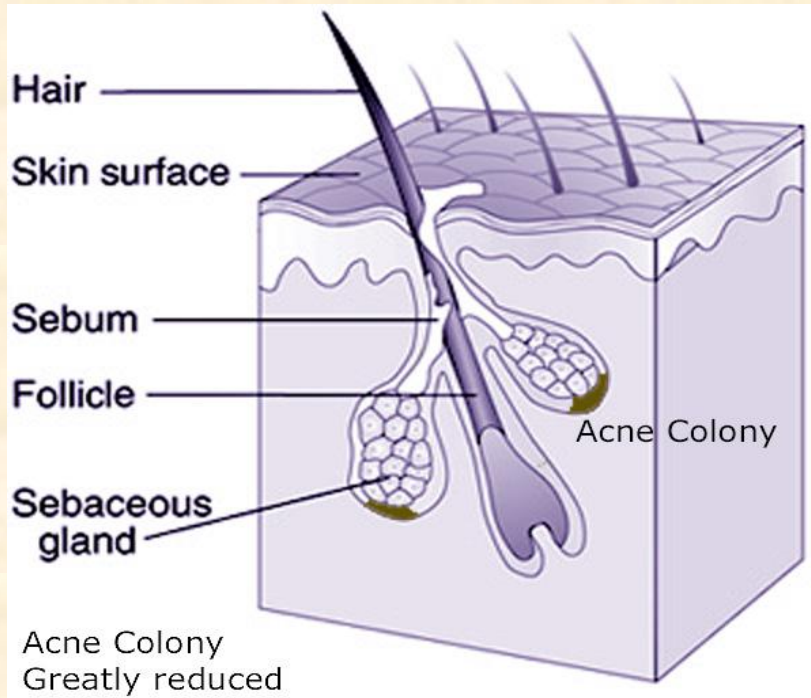
How Does PowerLight LED Light Therapy work for Acne?



When pores clog, conditions are right for acne growth, and inflammation starts.

Safe, Gentle, and Effective

How Does PowerLight LED Light Therapy Work?



The acne infection is greatly reduced after treatment.

No Harsh Antibiotics or Chemicals

Blue Light Effects

- According to a report presented to the American Academy of Dermatology in October of 2002, acne improves after a few light treatments
- 15 minutes of exposure to low-level blue light twice a week for a month reduced acne symptoms by 60%
- The effect lasted up to 8 months
- Light gets at the core of what causes acne eruptions: **P. acnes**
- **Porphyrins** exposed to blue wavelengths produce free radicals that kill P. acnes
- Parade Magazine November 2002

Blue/Red for Acne

From British Journal of Dermatology
Volume 142 Issue 5 Page 973 - May 2000
doi:10.1046/j.1365-2133.2000.03481.x
Papageorgiou P, Katsambas A, Chu A.

- In this study they evaluated the use of blue light (peak at 415 nm) and a mixed blue and red light (peaks at 415 and 660 nm) in the treatment of acne vulgaris.
- 107 patients with mild to moderate acne vulgaris were randomized into four treatment groups: blue light, mixed blue and red light, cool white light and 5% benzoyl peroxide cream.
- Assessments were performed every 4 weeks.

Blue/Red for Acne

- The blue/red combination was significantly superior to that achieved by blue light, benzoyl peroxide or white light .
- The final *mean improvement in comedones by using blue-red light was 58%* . Again, better than that achieved by the other active treatments used.
- “We have found that phototherapy with mixed blue-red light, probably by combining antibacterial and anti-inflammatory action, is an effective means of treating acne vulgaris of mild to moderate severity, with no significant short-term adverse effects.”

Additional Conditions that are affected by LED treatments

- Rosacea
- Eczema / Psoriasis
- Post Op
- Post Aesthetic Procedure
- Wound management
- Sports Injuries
- Diabetic Neuropathy

PowerLight wavelengths

- Near Infrared 950nm infrared Light :
deep penetration into muscles
- Red Light 660nm Red Light:
penetrates into the dermis
- Blue Light 480nm Blue Light:
antibacterial, acne, sits on surface
- Violet Light 420nm Violet Light :
antibacterial, acne

Post Procedure

- Use after Laser and IPL
- Use after peels
- Use after microdermabrasion

- Promotes the growth of healthy collagen and thickens the base of the epidermis in conjunction with the above procedures

Post Op

- LEDs can reduce the edema and erythema associated with surgical procedures if used post-operatively
- LEDs will reduce the chance of scarring
- LEDs will reduce the down time associated with surgery
- LEDs will improve the appearance of bruised tissue at a quicker rate

Light Is Not Enough

- LEDs alone have been shown to be efficacious in about 65% of treatments
- LEDs have shown the ability to enhance topical penetration
- LEDs appear to mimic topical retinoid and antioxidant use via different biological pathways
- When used in conjunction with retinoids and antioxidants, LEDs compress the time frame of results and increase efficacy to over 90%
- Used with hyaluronic acid gel to get immediate plumping of tissue

Power Light System

- Use with Power Light Contact Gel to get immediate results
- Use post Power Peel to reduce redness and enhance collagen growth
- Use post chemical peel to reduce irritation
- Use with micro-current to get immediate effects

Why PowerLight?

- Largest hand held wands to cover more area in shortest time
- 2 wands can be used at same time to shorten effective treatment time
- Proven technology, delivers $4\text{j}/\text{cm}^2$ in less than 90 secs
- Uses Blue and Red/ near infrared wavelengths that work
- Priced very competitively