

Rejuvenessence

Photo-Light

Therapy

[600nm – 800mn]

Introduction & History

Light Therapy has been used for over 70 years

- 1930's & 1940's Drs. Knott & Miley --- blood irradiation to treat acute infections (then came along antibiotics)
- 1980's & 1990's NASA discovered Light Therapy to be beneficial in treating "SAD" (seasonal affective disorder) and facilitating skin tissue growth and surface wound healing
- Today, Light Therapy has been shown in independent research worldwide to deliver powerful therapeutic benefits to living tissue and organisms. Clinically there have been no recorded side effects in over 1,800 publications.

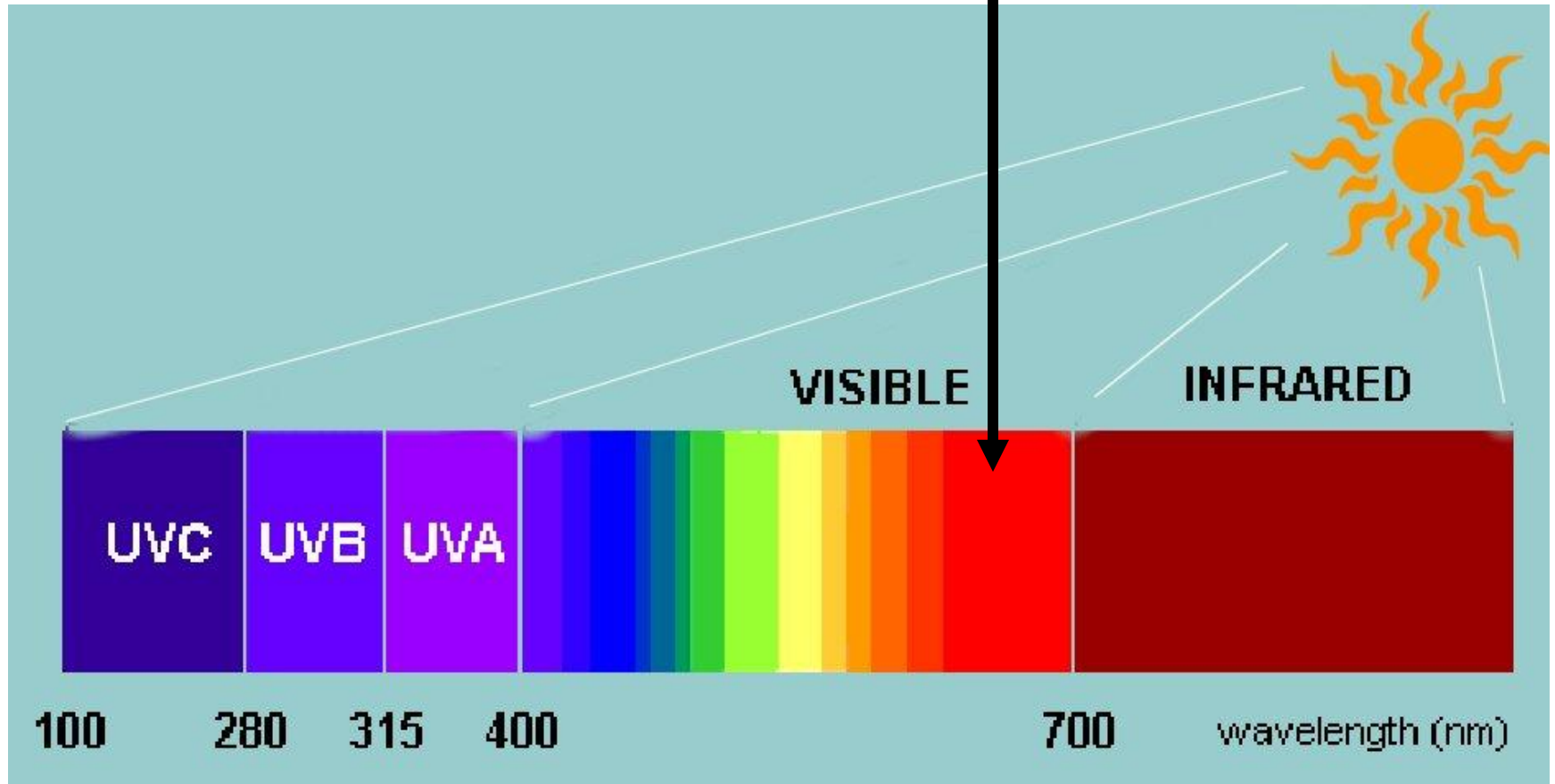
Electromagnetic Spectrum & Light Therapy

<u>NAME</u>	<u>WAVELENGTHH</u>	<u>USED FOR</u>
Radio Wave	1 – 1000 meters	Radio, TV
Micro Waves	2 – 1000mm (1mm=.001 meter)	Radar, Ovens
Infrared Waves	700 – 2000nm (1nm=.000000001 meter)	Heating Lamps
Visible light	400 – 700nm	Illumination
Ultra Violet	1 – 400nm	Tanning Lamp
X-rays	1 – 1000pm (1pm=000000000001 meter)	X-raying
Gamma Rays	1 – 1000fm (1fm=000000000000001 meter)	Accelerators
Rejuvenessence Light Therapy	600nm – 800nm (633nm)	Skin Care

Wavelength & Depth of Penetration

- The shorter the wavelength the quicker it is absorbed
- The longer the wavelength the deeper the penetration
- Depth of penetration is defined as the depth at which 60 % of the light is absorbed by the skin tissue
- This 60% depth distance is where the light will have the greatest bio-stimulation effect
- Visible red light, at wavelengths of 600 – 660 nanometers, penetrate skin tissue to a depth of about 8 – 10mm (2/5 of inch)
 - beneficial in treating problems close to the skins surface such as wounds, cuts, scars and is particularly effective in treating skin infections
- Infrared light, at wavelengths of 700 – 900 nanometers, penetrate to a depth of about 30 – 40mm (1.5 inches)
 - beneficial in treatment of sore joints and deep muscle tissue

633nm



Effect of 633nm

This process results in the vascular walls of the skin's small blood vessels being strengthened, thus improving oxygenation and detoxification of the skin.



Hydration is increased and the ability of the skin to retain moisture improves. Increased cellular activity, improved natural repair and the creation of healthy skin conditions leads to cell regeneration.

Photo Rejuvenation Effect

Photo Rejuvenation works at the cellular level. Each cell contains a number of power plants, called mitochondria. The function of these power plants is to produce ATP (adenosine triphosphate), the form of energy that can be used by the cell to function properly. The Red and Infrared spectrum of the electromagnetic radiation are used for Photo Rejuvenation because they are well absorbed by the collector surfaces of the mitochondria as an additional source of energy. The cellular power plants can thus produce more ATP. ATP is the cellular energy or fuel the skin cells strive after and need. A sufficiently high supply of cellular energy enables our skin cells to work under optimum conditions and is the essential prerequisite to ensure a successful self-healing process.

Physiological Benefits of Light Therapy

In mature skin and tissue, the increased cellular activity results in physiological benefits which taken together are frequently called, “Photo Rejuvenation”. These benefits are:

1. Increased blood circulation
2. Increased proliferation of fibroblasts (connective tissue that secretes fibers)
3. Stimulation of collagen production
4. Increased lymphatic activity
5. Stimulation of the body’s anti-inflammatory response

High versus Low Power Skin Treatment

- **High Power = Laser and IPL (Intense Pulse Light)**
- **Low Power = LED and Rejuvenessence**

High/Low Power Treatment Table

<u>Condition</u>	<u>High Power</u>	<u>Low Power</u>
Rejuvenation Effects	YES	YES
Cost of Equipment	HIGH	LOW
Vascular Treatments	YES	NO
Risk of Tissue Damage	YES	NO
Risk of Eye Damage	YES	NO
Medical Supervision	YES	NO
Painful	YES	NO
Recovery Downtime	YES	NO
Anti-Wrinkle	YES	YES
Acne	YES	YES
Age Spots	Eliminates	Shrinks

Low Power: LED versus Rejuvenessence

<u>Characteristic</u>	<u>L.E.D.</u>	<u>Rejuvenessence</u>
Treatment Area	Face	Full body
Output (watts)	< 300W	> 3,000W
Initial <u>8</u> Week Session Times	15-20 min. Twice/Week	10-15 min. Twice/Week
Maintain Results Session Times	15-20 min. Twice/Month	10-15 min. Twice/Month
Equipment Cost	Expensive ~ \$10K - \$40K	Reasonable ~ \$1K - \$10K

So, what does Red/Infrared Light Therapy actually do?

- **Increases Vascularity – supplies additional oxygen and nutrients needed for healthy skin**
- **Stimulates Collagen Production – the protein that holds cells together with a high degree of elasticity (reduces wrinkles)**
- **Stimulates Release of ATP – ATP allows cells to readily accept nutrients & expel waste products faster by increasing cellular energy**
- **Increases Lymphatic System Activity – Edema (swelling) has two components (Liquid & Proteins) – lymph system activity is doubled thus increasing the amount and rate at which edema is evacuated and swelling is relieved (i.e., under eye swelling)**

So, what does Red/Infrared Light Therapy actually do?

- **Increased RNA and DNA Synthesis – helps the body replace damaged cells more promptly**
- **Stimulate Fibroblastic Activity – connective tissue fibers that aid in skin repair (i.e., cuts, scraps, scars, etc.)**
- **Increases Phagocytosis – process of scavenging for and ingesting damaged and dead cells – particularly important in acne and infection control**

Additional Important Light Therapy Information

- P-R effects last 30 to 90 days once max results are achieved
- Two 15-minute maintenance session per month needed
- P-R has no reported side effects and is pain free
- Genetic skin conditions (i.e., port wine stains, moles, freckles and spider veins) will not respond to P-R treatment
- Rejuvenessence light therapy will not harm eyes, dark skin nor will it remove a tan
- Rejuvenessence treatment sessions can equal the benefits of similar treatments using LASER, IPL or LED light sources but at less than 1/2 the cost!

Enhancing Creams & Products

In March of 2003, the American Dermatological Society suggested that the use of anti-oxidant vitamin creams with photo rejuvenation treatment gave better cosmetic effects than using either alone.

- **Anti-oxidant creams (vitamins A, E, C, K and Alpha-Lipoic Acid) should be used after cleaning the skin and either before or after the Rejuvenessence treatment session**
- **Moisturizers such as Hyaluronic Acid, Ellagic Acid and Aloe should be used after cleaning the skin and before Rejuvenessence treatment session**

Who Should Get Doctor's Permission?

EPILEPSY

PREGNANCY

CORTISONE AND STEROID INJECTIONS

CANCER FIGHTING DRUGS

PHOTOSENSITIVE CREAMS AND DRUGS

Rejuvenessence Lamps

TYPE	LSI	LAMP	RED	Red Light *	BULB	BASE	REFL	OPERATING	USEFUL HOURS
	P/N	WATTS	COATING	$\mu\text{W}/\text{cm}^2$	LENGTH	TYPE	ANGLE	CURRENT (max.)	OF OPERATION
<i>Rejuvenessence by LSI</i>	2290	T5 - 15W	633nm	26,000	12"	BP	210	260 mA	2500
<i>Rejuvenessence by LSI</i>	2291	T5 - 25W	633nm	30,000	20"	BP	210	400 mA	2,500
<i>Rejuvenessence by LSI</i>	2284	80W	633nm	58,600	F59 - 5'	BP	210	1.0 A	2,500
<i>Rejuvenessence by LSI</i>	2283	100W	633nm	64,000	F71 - 6'	BP	210	1.0 A	2,500
<i>Rejuvenessence by LSI</i>	2401	100W	633nm	64,000	F71 - 6'	RDC	210	1.0 A	2,500
<i>Rejuvenessence by LSI</i>	2292	100W	633nm	64,000	F73 - 6'	RDC	210	1.0 A	2,500
<i>Rejuvenessence by LSI</i>	2285	140W	633nm	69,700	F59 - 5'	BP	210	2.0 A	2,000
<i>Rejuvenessence by LSI</i>	2286	160W	633nm	71,000	F71 - 6'	BP	210	2.0 A	2,000
<i>Rejuvenessence by LSI</i>	2287	180W	633nm	79,000	F79 - 2M	BP	210	2.0 A	2,000
<i>Rejuvenessence by LSI</i>	2289	200W	633nm	87,000	F75 - 1.9M	BP	210	2.0 A	2,000
<i>Rejuvenessence by LSI</i>	2288	200W	633nm	87,000	F79 - 2M	BP	210	2.0 A	2,000

The Best P-R Therapy Treatment

Rejuvenessence

System