

# Cosmetic Science Today

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## Amazing cosmetic procedure discovered almost by accident.

*Patients look 10-15 years younger in just a few months.*

By David Nolan

Baltimore, MD - Who would have guessed that the outcome of a NASA study for "plant growth" and "wound healing" in space would lead to one of the most revolutionary scientific procedures for reducing the visible signs of aging - wrinkles, fine lines and crow's-feet.

**NASA Light Emitting Diode Medical Applications**  
From Deep Space to Deep Sea

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**Abstract:** This work is supported and managed through the NASA Marshall Space Flight Center - SBR Program. LED-technology developed for NASA plant growth experiments in space shows promise for delivering light deep into tissues of the body to promote wound healing and human tissue growth. We present the results of LED-treatment of cells grown in culture and the effects of LEDs on patients' chronic and acute wounds. LED-technology is also biologically optimal for photodynamic therapy of cancer and we discuss our successes using LEDs in conjunction with light-activated chemotherapeutic drugs.

**LED-ENHANCEMENT OF CELL GROWTH**

Studies on cells exposed to microgravity and hypergravity indicate that human cells need gravity to stimulate growth. As the gravitational force increases or decreases, the cell function responds in a linear fashion. This poses significant health risks for astronauts in long-term space flight. The application of light therapy with the use of NASA LEDs will significantly improve the medical care that is available to astronauts on long-term space missions. NASA LEDs stimulate the basic energy processes in the mitochondria (energy compartments) of each cell, particularly when near-infrared light is used to activate the color sensitive chemicals (chromophores, cytochrome systems) inside. Optimal LED wavelengths include 660, 730 and 880 nm and our laboratory has improved the

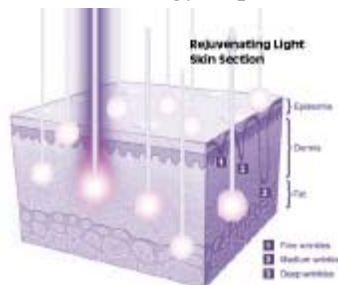
In the early days of manned space flight, astronauts found that if they were wounded in space they did not heal until they returned to earth. When they began growing plants in space to pave the way for longer space missions the astronauts discovered that if they exposed their injuries to RED LEDs that were being used to grow plants, the wound would heal and Low Energy Photon Therapy (LEPT) was born. In a later study, combinations of 660nm (Red) and 880nm (Infrared) at 4 Joules/cm<sup>2</sup> were found to be effective in stimulating fibroblasts (protein cells) that are active in creating collagen and elastin

### The Buzz!

You may have recently read about LED Light Therapy in a recent issue of Elle Magazine, boasting the anti-aging and anti-inflammatory benefits. Their studies revealed that exposing the skin to LED lights for a little under 20 minutes can plump skin, smooth wrinkles and fine lines.

### What is DPL™ Therapy?

DPL™ Therapy is a non-invasive procedure that activates skin cells with pulses of low-level, non-thermal light energy. DPL™ Therapy converts light energy within the skin cells, like photosynthesis, which takes sunlight and converts it into food energy in plants.



The Red 660 nm and Infrared 880nm LEDs of the DPL™ System stimulates the production of collagen and elastins. Collagen is the most common protein found in the body and is the essential protein used to repair damaged tissue and to replace old tissue both wounds and wrinkles. It is the substance that holds cells together and has a high degree of elasticity.



By producing collagen and elastins damaged skin is repaired - reversing the effects of aging skin, such as wrinkles, fine lines, blemishes, crow's-feet other sign of aging and sun damage. The energy delivered by the DPL™ Therapy treatments enhances cellular metabolism, accelerates the repair and replenishment of damaged skin cells, as well as stimulates the production of collagen.

### Why skin ages!

As we age each layer of the skin grow's thinner and the upper layer becomes rough. Collagen is one of the substances that gives our skin its youthful suppleness and tautness, but it is also especially susceptible to damage from free radicals. Normally, collagen molecules "slide" over one another, which gives the skin its softness and resiliency. But once they've been damaged they tend to become stiff and inflexible and those conditions tends to make the skin look "old."



### What do I have to do?

The DPL™ Therapy system is easy to use. Just sit in front of the soothing lights and the system will run for 9 minutes, shutting off at the end of that cycle. Use it twice a day if you like and you will first notice a tingling sensation and tightening in you skin. Soon you will see your fine lines and crow's-feet diminishing and your deep wrinkles, folds and sun damaged skin filling-in and healing.

**For more information you can reach LED Technologies at 800-337-9565**

*Individual results may vary.*