

LED Technologies, LLC

DPL™ Therapy

Deep Penetrating Light

The Latest Technological Breakthrough in Cosmetic Science!

Deep Penetrating Light

DPL™ Therapy



“The Secret is in the Science”

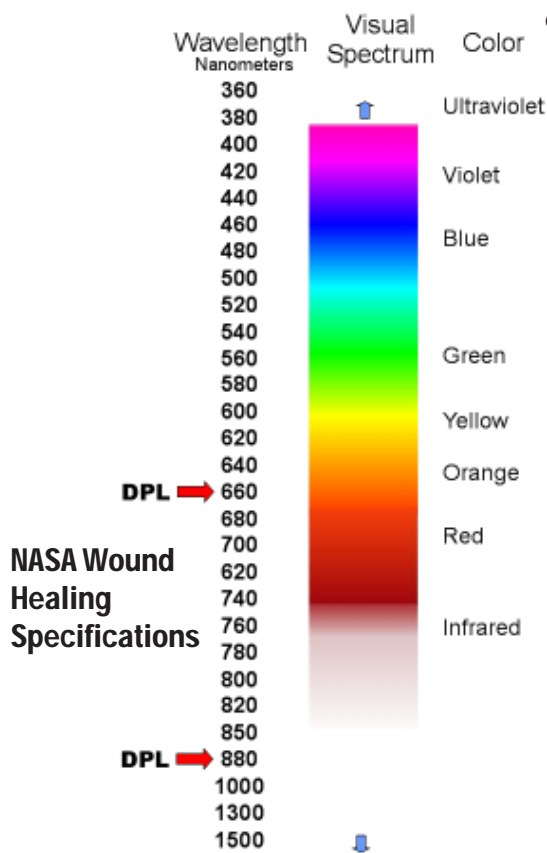
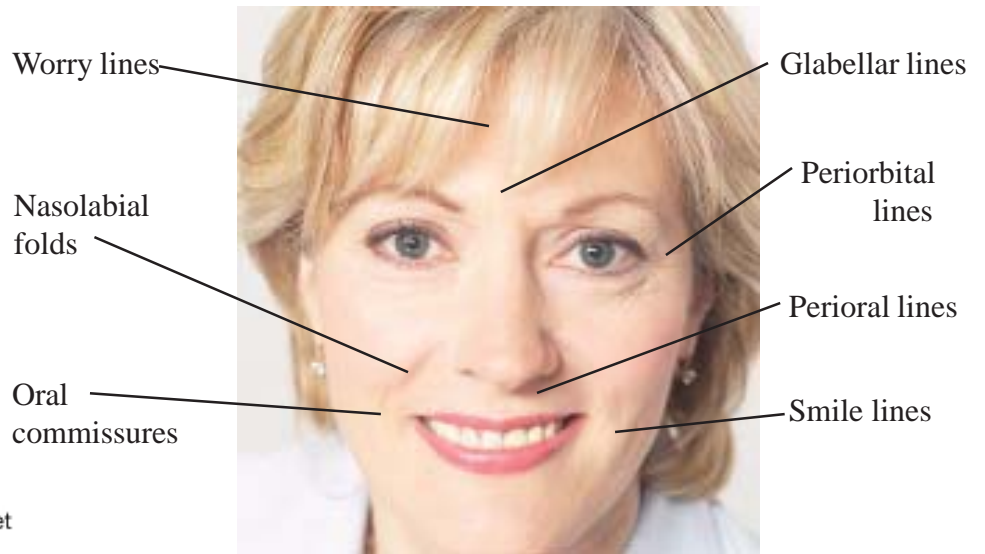
LED Technologies, LLC

LED Technologies, LLC is an invention incubator, manufacturer, distributor and marketing agent of beauty and health products utilizing Light-Emitting Diodes.

Our flagship product the DPL™ System uses a form of energy called “Photons” to stimulate deep into the skin to repair damaged tissue. The DPL™ System consists of specifically designed and engineered Red and Infrared LEDs which have been proven to diminish fine lines, creases, furrows and crow’s feet.

A smoother, younger complexion is the result with none of the painful and expensive surgery, peels, or injections. It’s all natural - your skin is plumped, refreshed and replenished from deep within, using Deep Penetrating Light - DPL™ Therapy.

DPL™ Therapy utilizes Red and Infrared LED wavelengths and a proprietary design based on NASA research to treat aging, photodamaged skin.



Through the use of our proprietary Light Emitting Diode configuration, LED Technologies, LLC has developed the products and procedures to repair and replenish the youthful look of your skin.

LED Technologies, LLC has based their products on the data and technologies of a NASA study on wound healing in space.

Our flagship product the DPL™ System is able to reverse the dreaded signs of aging: fine lines, wrinkles, and crow’s-feet.

DPL™ Therapy

Laboratory studies have shown that skin cells grow 150-200 percent faster when exposed to certain LED light wavelengths. Independent research for over 40 years has shown LED Red and Infrared light delivers powerful therapeutic benefits to living tissue. Both visible Red and Infrared light has been shown to affect at least 24 different positive changes at a cellular level.

Visible Red light, at a wavelength of 660 nanometers and invisible Infrared light at 880 nm penetrates tissue to a depth of 8-10 mm. LED light is very beneficial in treating problems close to the skin's surface such as wounds, cuts, and scars. Skin layers, because of their high blood and water content, absorb red light and infrared light waves very readily and deliver energy to stimulate a response from the body to heal itself.

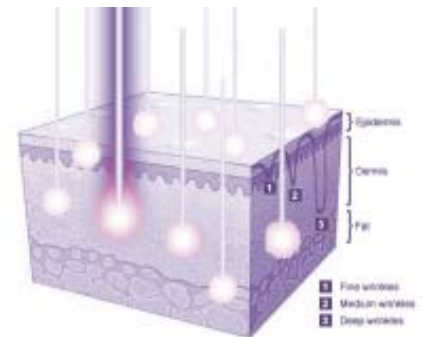


Before



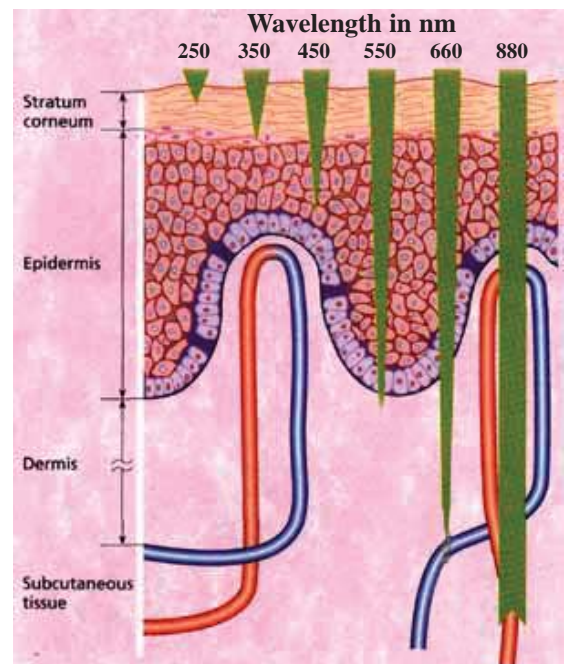
After

LED Photons must be absorbed to produce a biological response. All biological systems have a unique absorption spectrum, this uniqueness determines which wavelengths of light will be absorbed to produce a given therapeutic effect. The visible red and invisible infrared portions of the spectrum have been shown to be highly absorbent and produce unique restorative effects in living tissues. It is known that light photons are absorbed by the skin and underlying tissue triggering biological changes within the body in a process known as *photobiomodulation*. Although the exact mechanism of action is still undergoing study, what is known is that monochromatic light increases oxygen and blood flow, facilitating wound healing.



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.

DPL™ Therapy is one of the few non-invasive tools available that can reverse the effects of aging skin, such as wrinkles, mottled skin tone and enlarged pores.



Benefits of DPL™ Therapy



Before



After



Before



After

- ◆ Minimizes fine lines and wrinkles
- ◆ Reduces crow's-feet
- ◆ Heals blemishes
- ◆ Improves skin tone
- ◆ Regeneration/stimulation of collagen
- ◆ Restores the skin's natural cellular collagen activity
- ◆ Activates fibroblast cells which create collagen and elastin
- ◆ Helps sun-damaged skin
- ◆ Creates more skin moisture which will help fill out skin
- ◆ Increases circulation, providing a healthier skin tone
- ◆ Reduces melanin production, which causes brown age spots
- ◆ Promotes nutritional elements existing within the skin
- ◆ Helps irregular pigmentation
- ◆ Lessens skin coarseness
- ◆ Lessens pore size
- ◆ Stimulates and activates the metabolic function in skin cells
- ◆ Smooths skin texture
- ◆ Reduces skin degradation
- ◆ Reduces overall redness, flushing, dilated capillaries



Benefits of DPL™ Therapy

Increase vascularity (circulation). Circulation is increased by optimizing the formation of new capillaries, which are additional blood vessels that replace damaged ones. New capillaries speed up the healing process by carrying more oxygen as well as more nutrients needed for healing and they can also carry more waste products away.

Stimulate the production of collagen. Collagen is the most common protein found in the body. Collagen is the essential protein used to repair damaged tissue and to replace old tissue. It is the substance that holds cells together and has a high degree of elasticity. By increasing collagen production less scar tissue is formed at the damaged site.

Stimulate the release of adenosine triphosphate (ATP). ATP is the major carrier of energy to all cells. ATP provides the chemical energy that drives the chemical reaction of the cell. It is the bodies natural fuel.

Increase lymphatic system activity. Edema, which is the swelling or natural splinting process of the body, has two basic components. The first is a liquid part, which can be evacuated by the blood system, and the second is comprised of the proteins, which have to be evacuated by the lymphatic system. Research has shown that the lymph vessel diameter and the flow of the lymph system can be doubled with the use of light therapy. The venous diameter and the arterial diameters can also be increased. This means that both parts of edema (liquid and protein) can be evacuated at a much faster rate to relieve swelling.

Increase RNA and DNA synthesis. This helps damaged cells to be replaced more promptly.

Reduce the excitability of tissue. The photons of light energy enter the body as negative ions. This calls upon the body to send positive ions like calcium among others to go to the area being treated.

Stimulate fibroblastic activity. Which aids in the repair process. Fibroblasts are present in connective tissue and are capable of forming collagen fibers.

Increase phagocytes. Which is the process of scavenging for and ingesting dead or degenerated cells by phagocyte cells for the purpose of clean up. This is an important part of the infection fighting process. Destruction of the infection and clean up must occur before the healing process can take place.

Induce a thermal like effect in the tissue. The light raises the temperature of the cells although there is little heat produced from the diodes themselves.

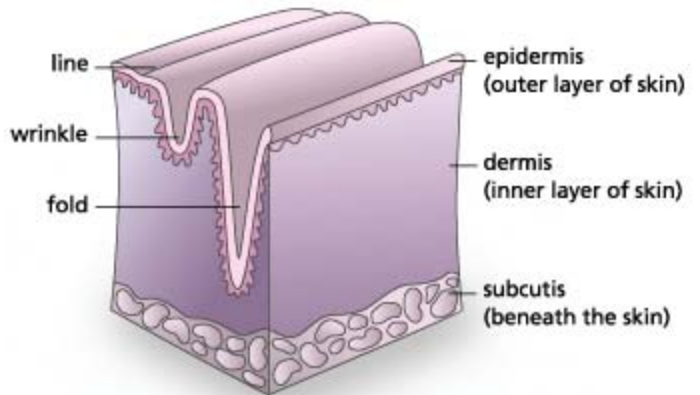
The Problem - Aging Skin

Premature Aging has a negative impact on careers, a person's social life, and their self-image. Wrinkles can have a pronounced impact on self-esteem. Indeed, the stigma attached to looking old is evidenced by the fact that Americans spend more than \$12 billion each year on cosmetics to camouflage the signs of aging. Our current society places a premium on youthfulness and age discrimination in the workplace, although illegal, has stalled many a person's career. Indeed, the emotional ramification of aging explains in large part why the cosmetics industry and plastic surgeons thrive.

Understanding the structure and function of the skin helped LED Technologies, LLC in the development of products that reduce the visible signs of facial aging.

As we get older components of our skin - collagen and elastin - degenerate setting the stage for the appearance of wrinkles, creases, folds, and furrows. The breakdown of these components, accelerated by sun exposure and gravity, result in sagging skin. Skin is easily damaged, by external factors such as sunlight, pollution, harsh soaps and chemicals, and by internal causes such as cigarette smoke and diet.

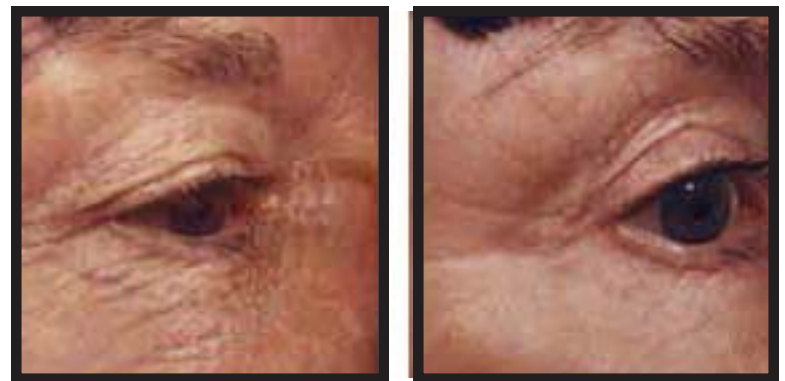
Source: The National Institute on Aging.



Free Radicals

According to the American Academy of Dermatology (AAD), with aging all skin cells begin to produce excess amounts of free radicals - unstable oxygen molecules - that, under ideal circumstances, are removed by naturally occurring antioxidants within the skin's cells. In aging skin cells, antioxidants are in short supply. The free radicals generated are left unchecked and cause damage to cell membranes, proteins, and DNA. These free radicals eventually break down a protein substance in connective tissue (COLLAGEN) and release chemicals that cause inflammation in the skin. It is a combination of these cellular and molecular events that leads to skin aging and the formation of wrinkles.

Considerable research has been done to understand the aging process and studies now show that products containing or producing bioactive effects (those that interact with living tissues or systems) can benefit sun-damaged, discolored, and aging skin.



Before

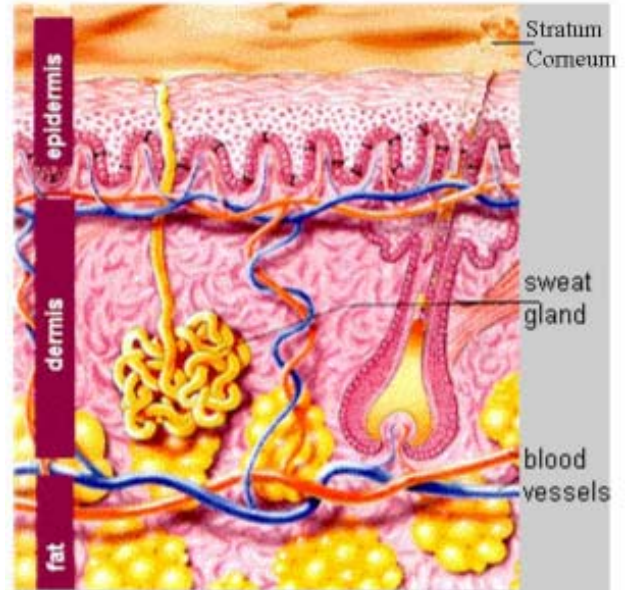
After

The effects of the RED and Infrared light from LED Technologies' DPL™ Therapy are giving people new choices for restoring their overall appearance.

Skin & Aging

As we age, each layer of the skin grows thinner. In addition, the Stratum Corneum 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 its skin its softness and resiliency. But once they’ve been damaged they become stiff and inflexible and that conditions tends to make the skin look “old.”

The energy delivered by DPL™ Therapy treatments enhances cellular metabolism, accelerates the repair and replenishment of damaged skin cells, as well as stimulates the production of collagen.



Skin Damage

Dryness: The skin’s oil glands reduce their production significantly after age 30.

Sun Damage: Melanocytes begin to burn out when you reach your late 30’s and 40’s reducing the skin’s ability to fight sun damage and often causing uneven pigmentation.

Thinning: After about age 40, the dermis and the skin’s fat layer begin to thin. The process picks-up-steam after your 50th birthday and the result is sagging and the loss of the plump, youthful softness. The loss of the fat layer also makes the skin more fragile and more likely to corrode.

Loss of Firmness: In the dermis, cells called fibroblasts constantly replenish our skins production of collagen and elastin. Fibroblasts lose their ability to function over the years, resulting in the reduction of collagen and elastin.

Diminished Immune Response: The skin is home to Langerhan’s cells, receptors for the immune system that registers the presence of foreign agents and toxins. Without them we are less likely to get a warning signal when we come in contact with irritants.

Reduced Ability to Repair Damage: Our body loses its ability to repair free-radical damage, so changes in the cells become more pronounced, accelerating aging.

Loss of Temperature Control: Sweat glands also slowly lose their ability to function, which makes it harder for our body to regulate itself and register heat and cold.



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