



LIGHTING A PATHWAY TO BETTER SKIN

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Light has been used in medical practice
to treat a wide variety of conditions
for many years.

SCIENTISTS have been able to harness and control the power of light by developing better ways to isolate certain “wavelengths” and to safely deliver the energy with minimal side effects. Some of the most exciting recent advancements have focused on

treating aging skin, pre-cancerous cells, and acne. Researchers who spent years attempting to find chemicals that could be applied to the skin to enhance light therapies have seen their efforts succeed with the FDA approval of a drug called Levulan®. When this agent

is combined with light, it boosts the effectiveness dramatically. This marriage of a drug plus light energy is referred to as "Photodynamic Therapy" or "PDT."

A basic understanding of how light energy affects skin cells does not require a degree in physics! We all know from our beach experiences that light which is not controlled or modified can be hazardous to our skin (ex. sunburns). Because natural light is composed of many "wavelengths," the key to using light in a beneficial way is isolating only one wavelength or a narrow range of wavelengths. An example of a device that emits a narrow range of wavelengths is the Intense Pulsed Light ("IPL") machine you may have seen at a medical spa. A device that emits only a single wavelength of light that has been enhanced and focused into a tiny beam is called, by definition, a "laser" (analogous to the laser pointer you saw at a lecture). When light energy is applied to skin, it is absorbed by different cells just as you absorb energy from the sun when tanning. By absorbing enough energy, these undesirable cells (ex. brown age spots, pre-cancers, etc.) are purposefully damaged and eliminated. Thus, the effectiveness of light therapies is based on producing the best light source, or wavelength(s), for the job and safely applying it to the skin.

Drugs designed for PDT are designed to make the bad cells even more susceptible to light. Levulan is absorbed by skin cells and transformed into "porphyrins" which are chemicals that increase a cell's vulnerability to damage. There are two broad categories in which PDT is currently in use: Improving sun-damage/pre-cancerous skin changes and treating acne. For sun-damaged skin correction, IPL has been a successful therapy for a number of years. It has been well-received because of its ability to reduce brown spots, redness, visible blood vessels, and facial hair with no down time or peeling. When Levulan is added to a treatment, these effects are enhanced and new benefits are seen. This often means better results or fewer sessions required, or both.

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For those battling acne, these therapies are proving to be an excellent option. Light devices are now on the market that targets the bacteria that cause acne and the skin glands that are involved in acne eruptions. While these light treatments are convenient, rapid and painless, Levulan can now be added to boost results. For anyone familiar with the toxic effects of Accutane, this could be a superb alternative.

Stay tuned to this exciting area of medicine. Just as in the case of other therapies such as Botox[®], new applications and benefits continue to be uncovered. The best way to determine whether these therapies can be of benefit to you is to seek the expertise of a board-certified physician or the staff at an advanced medical spa who provides these services.



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