

# Aesthetic Buyers Guide™



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## Light BioScience Pioneers LED Photomodulation Process

GentleWaves™ is a new light-based, non-thermal photorejuvenation procedure from Light BioScience, LLC (Virginia Beach, Va.) designed to improve the appearance of photoaged or environmentally damaged skin in all ethnic skin types. This proprietary patent-pending Photomodulation process utilizes non-laser, light-emitting diodes (LEDs) operating at specially calibrated parameters which are thought to photoactivate or photoinhibit the normal cellular activity of living cells.

"We're used to dealing with high-energy sources and a thermal response for collagen production that induces a lot of pain and redness on the skin," said Robert Weiss, M.D., an assistant professor of dermatology at Johns Hopkins University School of Medicine. By contrast, "you might think intuitively that something like GentleWaves with such a low energy output would offer little or no benefit. However, in essence you're energizing the cellular batteries. There is a mechanism by which our cells produce energy to sustain life. And you can actually stimulate that mechanism with light."

Light BioScience is completing long-term follow-up on a multicenter clinical study of 90 photoaged patients. Each patient received a total of eight treatments. "We've also performed skin biopsies that show actual collagen production in the papillary dermis," noted Dr. Weiss, a clinical investigator for the company. Overall, "we've seen far more improvement than expected. Not only has there been a reduction in wrinkling, but improvement in texture and very fine telangiectasias. Background pigmentation has also improved." Furthermore, none of the 90 patients experienced any adverse side effects. "Because LEDs are a very low-energy light source, the three light panels can be safely positioned inches away from the skin," Dr. Weiss explained. "Treatment sessions last only a few minutes."

According to Roy Geronemus, M.D., director of the Laser & Skin Surgery Center of New York, N.Y., "theoretically, you can turn cells on and off by modulating the type of low-intensity light that is delivered to tissue. And the LED's light energy output is applied to the skin surface in such a

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Pre GentleWaves® LED Photomodulation



1-week post GentleWaves® LED Photomodulation

*Photos courtesy of  
David H. McDaniel, M.D./Light BioScience, LLC*

way that there is no pain." Dr. Geronemus, who is one of the principal clinical investigators for GentleWaves, shared study results of 90 female patients in October at the annual scientific meeting of the American Society for Dermatologic Surgery (ASDS) in Chicago. All patients, which had photoaged facial skin, received an average of eight LED photomodulation treatments.



Roy  
Geronemus,  
M.D.

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For the study, Dr. Geronemus used a new measurement device called PRIMOS profilometry that provides a three-dimensional image of skin. "One can look at contours and quantitatively measure differences," said Dr. Geronemus. One week after the final treatment, "there was a 62% improvement in the appearance of skin in the periorbital region." Other clinical results included a reduction of 26% in skin roughness, 30% in elastosis, 14% in pore size and 25% in redness.

**"One does see improvement** in skin tone, texture and some fine lines in a significant number of patients," Dr. Geronemus stated. "We are achieving a definite benefit and it does not hurt. There is no downtime and the technique is much less expensive for both the physician and the patient. This is breakthrough technology in the sense that we have gone beyond the concept of thermal injury to the skin to create an efficacious response."

Although "preliminary results are very favorable, it is too early to know how they compare to other therapies," Dr. Geronemus said. Nonetheless, added Dr. Weiss, "Photomodulation will be the easiest technology to use because it simply involves properly positioning the patient, pressing a button, and letting the computer do the treatment. There is absolutely no hands-on treatment required."

The GentleWaves system "should not be confused with small handheld LED devices that are now being marketed to salons and for home use,"

Dr. Weiss emphasized. "Imitators that don't have the proper energy code or proper treatment algorithm will not produce the desired results."

**Light BioScience expects LED** Photomodulation to be commercially available by early 2003. Data from the current photoaging studies will be submitted to the FDA, while the company is also investigating the use of Photomodulation for wound healing and other therapeutic solutions such as acne. To protect this technology, Light BioScience has a broad and expanding portfolio of pending and issued patents.

A customized skincare kit is another integral element of the Photomodulation process and was designed to specifically enhance the results of GentleWaves treatment. "Our skincare products are unlike other cosmeceuticals on the market and rated exceptionally high on patient satisfaction," noted David McDaniel, M.D., inventor of Photomodulation and co-founder of Light BioScience. "These are not



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your off-the-shelf *me too* topical formulations, but were developed by leading cosmetic chemists and rigorously tested over several years. This kit will set a new standard for anti-aging cosmeceuticals."

**According to Dr. McDaniel**, the Photomodulation process is highly complementary to many other skin treatments, including Botox, dermal fillers, and non-ablative laser/light photorejuvenation techniques.

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