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Clinical Roundtable Supplement

Versatile Omnilux LED Enhances Cosmetic Results

The Omnilux® LED (light-emitting diode) system (Photo Therapeutics Ltd., Staffordshire, U.K.), has established itself as an effective treatment of acne, periorbital wrinkles, tissue regeneration, actinic keratosis (AK), Bowen's disease and superficial basal cell carcinomas. It's also enhancing the results of facial cosmetic procedures.

According to Mark B. Taylor, M.D., Omnilux offers a broad spectrum of aesthetic possibilities because all three treatment wavelengths can be used effectively for a number of indications: 633 nm (red, Omnilux revive™), 415 nm (blue, Omnilux blue™), and 830 nm (infrared, Omnilux plus™). "The research goes back at least 20 years. The results of European studies and more recent clinical trials in the U.S. have been excellent. Electron micrographs show increased production



Before Tx

After six alternating red and blue light treatments

Photos courtesy of Joseph Nhamtu, III, D.M.D.



Mark B. Taylor, M.D.

Medical Director
Gateway Aesthetic Institute and Laser Center
Salt Lake City, UT, USA

of procollagen as well as stimulation of fibroblasts. These studies show decreased inflammation, increased wound healing and neovascularization. More controlled studies are in progress." Dr. Taylor is the medical director of Gateway Aesthetic Institute and Laser Center in Utah, U.S., and has treated approximately 1,200 patients with the Omnilux during the past three years.

"When used alone to treat acne, patients not only report excellent clearance, they report better texture and skin tone," Dr. Taylor said. Dramatic results

emerge when Omnilux is used as an adjunct to other known technologies such as FotoFacial™ procedures, long pulsed YAG, or intense pulsed light (IPL). Omnilux is also used to treat complications that may arise from other light-based treatments. "Everyone who uses IPL will occasionally see redness or even blistering. We find it helpful to put these people under the Omnilux plus at 830 nm and treat them for a few days or a week, depending on the results."

Dr. Taylor is especially excited about Omnilux photodynamic therapy (PDT) with 5-aminolevulinic acid (ALA). "The placement of diodes in the treatment head and the way they are focused to project light forward provides a nice, even distribution of light with enough intensity to make PDT work well. Further controlled investigation into ALA-PDT photorejuvenation is required but the benefits seem clear."

"The great lesson of today's aesthetic world is that there isn't one hammer for all the nails. With Omnilux, we've got another tool in that toolbox that you can use on its own or to enhance everything else you're doing," Dr. Taylor added.

Editor's Note: In the following Clinical Roundtable, moderated by Dr. Taylor, dermatologists and plastic surgeons from around the globe share their knowledge and experience with Omnilux.

What attracted you to the Omnilux system?

David J. Sire, M.D. – Originally it was the extensive experience and success with the Omnilux in Europe. What impressed me later was the compatibility of this system with PDT to treat skin cancer, superficial basal cell carcinoma and Bowen's disease.



David J. Sire, M.D.
Advanced Skincare Medcenter
Fullerton, CA, USA

Susan Lin, M.D. – What attracted me to this system was the scientific data behind it and the amount of energy it was able to deliver.

Mario A. Trelles, M.D., Ph.D. – The red and infrared wavelengths used are very familiar to me, so I decided to incorporate this unit into our daily practice for a variety of skin disorders and for skin rejuvenation.

R. Glen Calderhead, M.Sc., Ph.D., F.R.S.M. – For me it was the way Photo Therapeutics had used photobiological knowledge to select the specific wavelengths they were going to employ with Omnilux from the beginning.

Joseph Niamtu, III, D.M.D. – Word of mouth. I heard so many good things about Omnilux that I thought it was too good to be true, but the topic kept coming up. People were saying, "You've got to try this, it's effective and versatile."

David J. Goldberg, M.D., J.D. – This is a very popular LED in Europe, and I was intrigued that it was an interchangeable system.

How easy has it been to integrate the Omnilux into your practice?

Dr. Trelles – It has not been difficult at all. We are so enthusiastic about Omnilux that we have two of these units in our clinic.



Severe inflammatory acne before Tx **After three treatments with photodynamic therapy with 5-aminolevulinic acid using the 633 nm (red) Omnilux revive for activation**

Photos courtesy of Mark B. Taylor, M.D.

Dr. Niamtu – It's been extremely easy. This is the time for minimally ablative surgical procedures. Patients want wash-and-wear surgery or drive-thru surgery; they want good results with minimum downtime. Omnilux is representative of that type of technology.

Dr. Lin – I incorporate Omnilux with all my procedures, such as botulinum toxin type A (Botox® Cosmetic, Allergan, Inc., California, U.S.) injections, hyaluronic acid (Restylane®, Medicis Pharmaceuticals, Inc., Arizona, U.S.) injections, photofacials and acne treatments. Sometimes we even use it when a patient gets a photomodulation treatment.



David J. Goldberg, M.D., J.D.
Clinical Professor of Dermatology
Mount Sinai School of Medicine
New York, NY, USA

Dr. Goldberg – It's been very easy because, although I use Omnilux occasionally as a primary treatment, I use it mainly as an adjunctive treatment to all the other laser and topical treatments we do.

Dr. Sire – It has been fairly easy to integrate Omnilux because we use it for multiple applications.

What conditions do you treat with the Omnilux?

Dr. Sire – We use it for acne, rosacea, skin cancers and AKs. We've also used the 830 nm wavelength as a pre-

and post treatment of some for our surgical patients. It decreases the healing time and makes patients more comfortable.

Dr. Niamtu – I'm using the Omnilux for wound healing and for acne. I've had facial trauma cases with full thickness wounds that were not healing or healing slowly, even cases I had considered skin grafting. I decided to try the Omnilux and it noticeably accelerated the wound healing process.

Dr. Lin – I use the Omnilux for photodamage, rosacea and any kind of skin irritation. I even use it to treat eczema. The Omnilux is so safe that except for patients with contraindications, I can't think of any patient I wouldn't use it on.



Susan Lin, M.D.
Gynecologist
San Mateo, CA, USA

Dr. Goldberg – We use the red and near-infrared wavelengths together for anti-aging as an adjunct to lasers. We use the red LED as an adjunct when treating acne. We use predominantly the red and sometimes the blue LED when we're using PDT to treat precancerous lesions.

Dr. Trelles – We use the Omnilux to treat post-surgical wounds to enhance wound healing and to prevent scarring. We also use it to treat acne and psoriasis.

Dr. Calderhead – Mild to severe inflammatory acne and really, anything cosmetic. In Japan, everyone likes to look lighter, so we also use Omnilux revive for skin lightening.

How successful has Omnilux treatment been?

Dr. Niamtu – When I use the Omnilux to enhance the results of another device, I incorporate the cost of the Omnilux into the procedure. With patients whom I'm using the Omnilux alone, I have a standing agreement that if they don't see a difference, I'll refund their money. I have not had to do that yet.

Dr. Lin – Omnilux has worked well, even with severe acne. I was quite impressed. I'm seeing clearance of acne in about 90% of patients by the second month after treatment. The Omnilux also reduces downtime, especially for my Asian patients, who represent one-third to one-half of my practice.

Dr. Goldberg – In a paper I co-authored we were able to show microscopically that new collagen was formed after using Omnilux. Clinically after Omnilux therapy the skin has a better hue and quality to it. Generally we see healthier, less tired looking skin.

Dr. Trelles – Omnilux is very promising for patients who don't want ablative resurfacing or a similar treatment with a lot of downtime. It can be used as a weekend peel.



Mario A. Trelles, M.D., Ph.D.
President and Medical Director
Medical Institute of Vilafortuny
Cambrils, Spain

Dr. Calderhead – As with many similar procedures, management of patient expectations is very important. In acne for example, patients are not going to see the full results immediately after the final Omnilux treatment. There is a pretty sharp falloff, about 40% or 50% reduction, which continues for up to 12 weeks. We have longer follow-up data, but that has not yet been published.

Dr. Sire – The Omnilux has been a huge advantage for us in terms of results and patient satisfaction.

Can you give us examples of your treatment protocols?

Dr. Niamtu – I basically follow the treatment protocol booklet supplied with the unit, but one of the things about the Omnilux is that it's virtually impossible to hurt somebody with it. The standard protocols lend

Photos courtesy of Joseph Niamtu, III, D.M.D.



Full thickness wound at 90 days

Full thickness wound after two Omnilux plus treatments

themselves to individual doctor innovation. Four treatments may be recommended, but when the patient notices the difference and wants four more treatments, it doesn't bother me to extend the protocols.

Dr. Trelles – If we want to help wound healing after surgery, for example, we recommend five treatments during the first week after surgery. The first is given with the 830 nm wavelength, followed by two treatments with the 633 nm wavelength. Then we go back to the 830 nm with the final treatment returning to the 633 nm. This has dramatically reduced the occurrence of common conditions, such as scarring, that would affect the overall quality of the result.

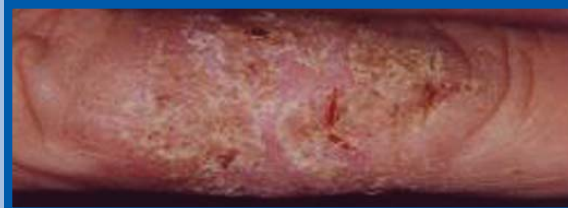
Dr. Sire – When doing PDT with the Omnilux for AKs or skin cancers (basal cell carcinomas, incipient squamous cell carcinomas and Bowen's disease), we start by swabbing the treatment area (plus a 1 to 2 cm margin) with 20% ALA and then occluding the lesions for four to six hours. For sun damage and AKs, we incubate for two to three hours without occlusion. After incubation, the ALA is removed with water and the area is treated for 20 minutes with the Omnilux revive (633 nm). A day later we use Omnilux again (Omnilux plus [830 nm] for AKs or Omnilux revive for cancers) for 20 minutes. Five days later we treat the area again with Omnilux revive for 20 minutes. We notice that this regimen reduces healing time dramatically.



R. Glen Calderhead, M.Sc., Ph.D., F.R.S.M.
 President of SG Biomedical, Japan
 Research Coordinator
 Japan Phototherapy Laboratory in Tokyo
 Tokyo, Japan

Dr. Calderhead – For acne, we use two sessions per week for four weeks, alternating Omnilux blue and Omnilux revive separately, for 20 minutes each. The use of a whitening gel is recommended for darker skin types or those prone to possible secondary hyperpigmentation. Treatment should be preceded by a comedonal scrub to help with whiteheads and blackheads, and all makeup should be removed. Patients should be educated as to the continued improvement typically seen after the final treatment session; they should not think the result after the final session is as good as it's going to get.

Dr. Lin – I pretty much follow the Omnilux guidelines, but for photorejuvenation I hold 12 sessions, one per week. I use the Omnilux revive for the first two treatments and the Omnilux plus for the last ten. For



Bowen's disease before Tx



Bowen's disease after ALA-PDT Tx

Photos courtesy of
 Nick Lowe, M.D.

photofacials we start with a dermal infusion followed by the photofacial and then the Omnilux revive, all in one session.

How easy has it been to combine Omnilux with your existing therapies?

Dr. Calderhead – Very easy indeed. Most treatments are 20 minutes, it's a hands-free treatment, and the results are definitely better when Omnilux is used in combination. Controlled studies show this.

Dr. Lin – We use the Omnilux in combination with other treatments because it works so well with just about any procedure.

Dr. Niamtu – The public right now is very technology savvy and people seek out doctors that embrace new technology, so Omnilux is a natural fit. More and more patients want minimally invasive and non-ablative situations.

Dr. Sire – We combine Omnilux with surgery, pre- and post-procedure, to promote healing. Omnilux has been a success with our acne patients because it helps keep patients off oral medications such as Accutane® (Roche Holding AG, Basel, Switzerland). They avoid potential side effects and other problems.

What benefits can be expected when using Omnilux as an adjunct to other therapies?

Dr. Sire – To use Omnilux in combination is to maximize the benefits of other therapies and to minimize their side effects and complications.

Dr. Goldberg – Omnilux allows the physician to have ancillary staff treat patients, but more importantly the mechanism by which LED technology works is different from lasers. So whether you're treating acne or anti-aging, the more directions from which you attack the problem, the better the results are going to be. We find this to be true when we add Omnilux to our other treatments.

Dr. Calderhead – In general the results are better. When the Omnilux is an adjunct to another procedure that creates tissue damage and thus requires healing time, patients are healed 50% to 60% quicker with Omnilux than without. That's a big difference.

Dr. Lin – The Omnilux produces a result that's better than that of a photofacial or microdermabrasion alone. You also get accelerated wound healing and less downtime.

Dr. Niamtu – I think, like anything else, when you have a symbiotic treatment that is affordable, low risk and enhances the results, it's a win-win situation for the doctor and the patient.

Dr. Trelles – We have to tailor the treatment to each of our patients. For example, complementing microdermabrasion with Omnilux therapy, plus topicals, plus another therapy such as Botox, can offer a total solution. Furthermore, the Omnilux is safe and effective, so the addition of a safe procedure that improves results should be welcomed.

What new treatment protocols have you been developing?

Dr. Sire – We use the healing effects of Omnilux to reduce the inflammatory period of ALA-PDT to less than a week so people are able to get back to work and to their lives more quickly.

Dr. Goldberg – What we're now just beginning to look at is using LED treatments to reduce post-laser erythema. When we treat a patient with the Fraxel SR Laser (Reliant Technologies, Inc., California, U.S.) and follow with the Omnilux LED, the treated area has less redness than when the Omnilux is not used. We've been able to demonstrate this, although this is still in the research stage.

Dr. Lin – For facial rejuvenation there are patients on whom I use only the infrared. I don't alternate with

Omnilux revive. If a person is coming in for acne and I don't see a lot of *P. acnes* activity, I may not necessarily start with a blue light. I may only use the red and the infrared wavelengths.

Dr. Calderhead – In plaque type psoriasis ranging from moderate to quite severe, the initial results suggest that 633 nm red followed by 830 nm infrared is the better combination and the better sequence. I think the red light has been well associated with the anti-inflammatory and also the immunomodulatory process.



Joseph Niamtu, III, D.M.D.
Cosmetic Facial Surgery
Richmond, VA, USA

Dr. Niamtu – I'm subjecting individuals to the same aggressive CO₂ treatment identical in fluence, number of passes and power, and then treating some with the Omnilux and others (control group) without the Omnilux. I follow them with standardized digital photography in an effort to standardize the actual coloration.

Overall, how does Omnilux benefit you, your staff and your patients?

Dr. Goldberg – Treatment is simple and has no risk or downtime. It can be used in all skin colors and skin types as a primary or adjunctive treatment. I have no other device that can do that.

Dr. Niamtu – The Omnilux is affordable, extremely portable, easy to use and appears to produce the manufacturer's stated results. It's a product that is safe, and the staff can operate it without worrying about harming the patient. I think Omnilux is indicative of the technology we're going to see in the coming years. At the end of the day, if you as a practitioner feel a treatment is enhancing your patient care, and your patients perceive value, then the treatment is a good thing. The first law of surgery is to do no harm. The Omnilux is pretty much patient and doctor friendly.

Dr. Trelles – In principle, patients simply like the results with the Omnilux. The nurses can operate it because it's easy to handle, so the device is making money for you while you can be busy with other clients.

Omnilux Clinical Roundtable

Dr. Sire – The Omnilux is convenient, easy to use and speeds the healing process. It decreases the amount of oral medicine patients have to take, therefore decreasing potential adverse effects. But the nice thing about the Omnilux is that it helps the skin to heal. You get an excellent cosmetic result, much better than with a destructive procedure such as surgery.

Dr. Calderhead – The Omnilux works incredibly well in accelerating wound healing. That's a benefit for everyone because the patient gets better quickly. For the staff it's a system that operates in a completely hands-free manner.

Dr. Lin – I summarize the Omnilux as a very safe, effective, scientifically based light treatment with a wide variety of uses.

What do you see in the future for Omnilux?

Dr. Lin – I'm surprised Omnilux is not as widely used in the United States. With more research data and informational support for physicians to review, this will definitely change.

Dr. Niamtu – I think that as we progress, we're going to find more applications for Omnilux. I think it will be somewhat like Botox, which was first used for wrinkles in the forehead and now it has many other uses too.

Dr. Sire – I feel that cancer and precancer therapy with Omnilux as an alternative to surgery is an exciting breakthrough. I think as we move on in medicine, we're trying to use the body's own immune system to control cancer and to help the body heal rather than simply using destructive modalities. Right now we're only scratching the surface.

Dr. Calderhead – I think there is a huge future for Omnilux systems. I think it's a great way to try and reduce the spiraling healthcare costs because Omnilux is much less expensive than, for example, non-ablative skin rejuvenation lasers or IPLs. I think the flexibility and the ability to use the Omnilux in combination with one another and with existing modalities will really boost the application of Omnilux in almost every field of medicine.

Dr. Goldberg – I think we're beginning to see the increasing number of uses for the Omnilux for conditions beyond acne and precancerous changes. The anti-aging approach is quite revolutionary and we're just beginning to look at the anti-inflammatory approach. So the uses for the Omnilux are only going to expand with time. ■

ROUNDTABLE PARTICIPANTS:

R. Glen Calderhead, M.Sc., Ph.D., F.R.S.M.
President of SG Biomedical, Japan and Research
Coordinator at the Japan Phototherapy Laboratory in Tokyo
voice: + 01 698 810428
email: docrgc@cc9.ne.jp

David J. Goldberg, M.D., J.D.
Director, Skin Laser & Surgery Specialists of NY/NJ
Clinical Professor of Dermatology
Director, Laser Research and Mohs Surgery
Mount Sinai School of Medicine
Adjunct Professor of Law
Fordham Law School
New York, New York, USA
voice: +1 800 718 5504
fax: +1 201 441 9893
email: drdavidgoldberg@drdavidgoldberg.com

Susan Lin, M.D.
Gynecologist
MD Laser & Cosmetics
San Mateo, California, USA
voice: +1 650 340 7546
email: drlin@susanlinmd.com

Joe Niamtu, III D.M.D.
Cosmetic Facial Surgery
Richmond, Virginia, USA
www.lovethatface.com
voice: +1 804 347 3504
email: niamtu@niamtu.com

David J. Sire, M.D.
Advanced Skincare Medcenter
301W Bastanchurt Road Ste 210
Fullerton, California, USA
voice: +1 714 879 9936
email: drsire@ascmedcenter.com

Mark B. Taylor, M.D.
Medical Director
Gateway Aesthetic Institute and Laser Center
Salt Lake City, Utah, USA
voice: +1 801 595 1600
email: gateway@xmission.com