



**Welcome to the third edition of the Omnilux Medical Bulletin.** As we come to the end of 2005 it is encouraging to see the number of Omnilux™ publications in peer reviewed journals increasing, with 3 more publications added just this month to the growing list. The medical bulletin gives us the opportunity to share with you our experiences with Omnilux™ and this edition contains many examples from acne to hair regrowth. We sincerely hope that you will add value to this publication throughout next year with your experiences and comments. Finally, for those of you who attended the EADV in London and our Unique Scientific symposium on “Advances in LED therapy”, thank you. We hope you found the evening informative!

Until 2006

C.E.O. Sue D'Arcy

## EADV - OCTOBER 2005



**On 13th October 2005** at the European Academy of Dermatology and Venereology, Photo Therapeutics Ltd presented a unique scientific forum with 6 influential dermatologists presenting on LED therapy.

The symposium was chaired by **Dr Glen Calderhead** and covered topics such as acne, wound healing, skin rejuvenation and the use of LEDs as an adjunctive therapy to Botox, fillers and other popular aesthetic technologies.

The symposium was attended by over 120 delegates, taking place in the unique surroundings of the Sunborn yacht and was captured on film, the DVD will be available shortly. To receive your free copy please contact: Michelle at [Michelle.flaherty@omnilux.co.uk](mailto:Michelle.flaherty@omnilux.co.uk)



***“One of the great things about this LED unit is its versatility. You can treat different parts of the body, such as the chest and décolleté area, which are extremely important for women.”*** Dr Nick Lowe M.D., F.R.C.P., F.A.A.C.S.

## IMCAS JANUARY 6-8TH 2006



**The first meeting of 2006 is the IMCAS meeting,** Paris, 6th-8th January. Following last years successful meeting we are hosting a workshop, chaired by Dr David Goldberg on Friday 6th January. We hope to re-iterate the benefits of the multi-platform technology that allows the operator to treat numerous dermatological problems and to combat ageing skin, by light alone protocols or in combination with other modalities. If you are hoping to attend, please visit us on booth 11, Palais des Congres.

# OMNILUX LIGHT THERAPY-POST-SURGICAL AND NON-SURGICAL PROCEDURES

DR FABIEN BAEZ

INTERNATIONAL CENTRE FOR COSMETIC MEDICINE  
SYDNEY, AUSTRALIA

**Dr. Baez**, who practices at the International Centre for Cosmetic Medicine in Australia, now incorporates Omnilux into almost every part of his clinics daily routine. Dr. Baez reported on his findings from a pilot study comparing the healing time post Aptos/ contour threads in subjects pre and post Omnilux revive therapy versus a control group.



Comparisons were made between the irradiated and control groups, measuring the rate of haematoma formation, the degree of inflammation, time to resolution, patient satisfaction with recovery and the overall satisfaction with the cosmetic result. The results showed an overwhelming difference on the rate of haematoma formation, inflammation and patient satisfaction between the group that received the 5 treatments pre and post procedure with Omnilux revive and the unirradiated control group.

Although only a small sample size was trialled with the use of Omnilux Revive, results demonstrate a significant difference in all areas of the questionnaire.

Dr Baez also reported on the combination of Sculptra® and Omnilux revive. Sculptra® is a poly-L-lactic acid that contains skin-smoothing particles to help lift and smooth sagging skin, wrinkles, creases and dark circles. Treatment provides a gradual, natural looking result. Omnilux revive LED therapy was used post Sculptra over a 6-month period.



Subjective evidence and investigator assessment demonstrated that the 633 nm, Omnilux revive significantly reduced the incidence and duration of haematoma formation and inflammation. Again the results showed an overwhelming difference on the rate of haematoma formation

and inflammation with patients that received 1 treatment of Omnilux revive pre and 4 treatments post procedure. The patients were happier with reviews at 6- and 12-week intervals in comparison with the unirradiated control group.

In the third and final trial, over a 3-month period, the effect of 633 nm LED therapy on Botox efficacy was assessed. Ten patients each received 12 units of Botox to the crow's feet area. Omnilux revive therapy was applied, giving 1 treatment pre- and 4 treatments post procedure. The results showed a difference in rate of haematoma formation. Three months following the treatment, patients that had undergone the LED therapy also showed a small improvement in the longevity of the Botox treatment compared with the unirradiated controls.

Although Dr Baez has presented pilot work based on only 12 subjects per trial the use of Omnilux revive, pre and post therapy has demonstrated a significant difference in subjective and investigator assessment. Dr Baez plans for a more robust and well designed study in 2006 to scientifically prove the observations of his initial pilot work.

## Omnilux ventures across the pond

Photo Therapeutics Ltd

announce the opening of Photo Therapeutics Inc in Lake Forest, California, in order to manage directly the growth in demand in the



United States for the Omnilux™ range of LED technology.

The office will manage the Sales and Marketing activities within North America, as well as the extensive US-based clinical trial programme. Also housed within this Orange County facility will be highly trained service and support engineers.

## Photo Therapeutics Inc

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# MORPHOLOGICAL AND AUTOIMMUNOLOGICAL CHANGES IN HUMAN SKIN IRRADIATED *IN VIVO* WITH A 633 NM LED SYSTEM

TAKUYA OMI MD PHD

QUEEN'S SQUARE MEDICAL CENTER, YOKOHAMA, JAPAN

**Abstract taken from: 'The photobiological effects of red LED therapy in human tissue in vivo'.**

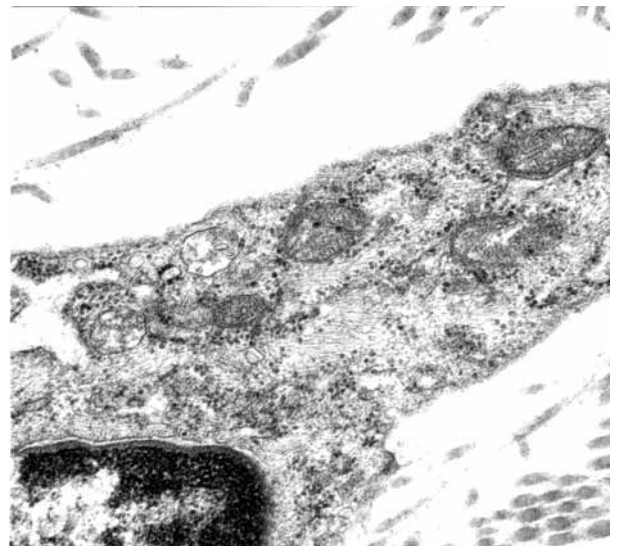
**Submitted 12th June 2005 - Lasers in Surgery and Medicine.**

Light-emitting diode (LED) systems at various wavelengths have been attracting a great deal of attention in a number of dermatological areas, such as the treatment of active acne vulgaris, and the photorejuvenation of photoaged skin. The mechanisms behind the success of these systems remain incompletely elucidated.

In 633 nm red LED therapy for skin rejuvenation, an increased band of well-aligned collagen has been shown in histological specimens up to 6 months after LED therapy.

The present study was designed to assess morphological and autoimmunological changes in 633 nm-irradiated human skin which might explain the presence of this phenomenon. Six adult male volunteers (35-48 years old) had the skin over the fibula irradiated once per week for 8 weeks with a visible red ( $633\pm 3$  nm) LED-based system (Omnilux revive, Photo Therapeutics, Fazeley, UK: 105 mW/cm<sup>2</sup>, 15 min/session, 94 J/cm<sup>2</sup>). Biopsies were taken from both legs of each subject after the second and eighth treatment sessions and routinely prepared for transmission electron microscopy (TEM). The contralateral unirradiated legs served as a control. Skin cultures were made from the 8-week biopsies to assay the type and quantity of skin homing T-cells using qualitative and quantitative polymerase chain reaction (PCR) techniques. TEM after the 2nd session showed normal undamaged tissue with slight interstitial edema and vimentin filaments notable in fibroblasts. After the 8th session, the number of fibroblasts in the dermis had increased with numerous vimentin filaments in their cytoplasm, and a mild inflammatory infiltration could be seen. Compared with cul-

tures made from skin from the unirradiated leg, qualitative PCR showed the presence of both Th-1 and Th-2 T-cells, and quantitative PCR showed an highly statistically significant increase in the numbers of both types of skin-homing T-cell compared with unirradiated skin, much more so for Th-2 than for Th-1. The ultra-structural changes in human skin after eight 633 nm LED therapy sessions showed no damage-related abnormalities, but were possibly related to the enhanced synthesis of collagen triggered by a mild inflammatory 'quasi-wounding' of the tissue possibly related to the photoenhanced degranulation of mast cells, and visible red LED irradiation appeared to activate the skin-homing immune system in otherwise morphologically normal human skin.



**TEM showing a Fibroblast in high metabolic state.**

Chromatin is now localised at the nuclear membrane, suggesting enhanced communication with the cytoplasm/organelles and an increase in Vimentin fibrils

**Published:**

**Calderhead RG** (2004). 'Not all photoscience is photothermal. Journal of Cosmetic Dermatology, Volume 3 No 4: 242. (Letter to the Editor) - Laser resurfacing today.

**Lanigan S et al** (2004) - 'A Single-Blinded Randomised Controlled Study to Determine the Efficacy of Omnilux Revive Facial Treatment in Skin Rejuvenation'. - Lasers in Medical Science (Springer) July 2005, Volume 20 Number 1.

**Baxter C et al** (2005) - 'A near infrared LED-based rehabilitation system: Initial clinical experience'. Laser Therapy 14.1:29-36.

**Trelles MA, Calderhead RG** (2005) - 'Combined Infrared laser and LED therapy for post mastectomy pain and discomfort: A case report'. Laser Therapy 14.1:29-36.

**Morton C et al** (2003) - 'An open study to determine the efficacy of blue light in the treatment of mild to moderate acne' - Journal of Dermatological Treatment. 2005; 16: 219–223

**Russell B et al** (2004) - A study to determine the efficacy of combination LED light therapy (830 nm and 633 nm) in facial skin rejuvenation. - Journal of Cosmetic and Laser Therapy volume 7 issue 3/4.

**Lowe N et al** (2004) 'Pilot Study to determine the efficacy of ALA-PDT photorejuvenation for the treatment of facial ageing'. - Journal of Cosmetic and Laser Therapy volume 7 issue 3/4.

**Submitted for Peer review:**

**Tremblay J F** (2004) - '415 nm in Inflammatory acne' - submitted-peer review - Journal of Cosmetic and Laser surgery.

**Russell B** (2004) - 'Combination blue (415nm) and red (633nm) LED light therapy in the treatment of mild to severe acne vulgaris' - submitted-peer review

**Omi et al** (2005) - 'Red LED therapy enhances fibroblast metabolism: A morphological in vivo study'. - Submitted 8th April 2005 Journal of Cosmetic and Laser Surgery.

**Omi et al** (2005) - 'The photobiological effects of red LED therapy in human tissue in vivo'. Submitted 12th June 2005 - Lasers in Surgery and Medicine.

**Kubota J et al** (2005) - 'Combined LED phototherapy in the Japanese skin type'. Submitted 18th July 2005. **Under review.** Journal of Cosmetic Dermatology.

**Trelles MA** (2005) - 'Postmastectomy pain can be treated with combined IR low-level light therapy'. Submitted July 3rd 2005. **Under review** - Photomedicine and Laser Surgery.

**Trelles MA** (2005) - 'Er:YAG laser ablation of plantar verrucae with red led therapy-assisted healing'. Submitted July 22nd 2005. **Under review** - Photomedicine and Laser Surgery.

**Calderhead G** (2005) - - 'The photobiological basis of combined LED therapy'. Planned Submitted December 2005 - Journal Cosmetic Dermatology.

**Trelles MA** (2005) 'Red light-emitting diode (LED) therapy accelerates wound healing post-blepharoplasty and periocular laser ablative resurfacing'. Submitted December 2005 - Journal of Cosmetic Laser Therapy.

**Trelles M** (2005) 'Combined LED therapy augments full face resurfacing and non ablative skin rejuvenation'. Submitted December 2005 - Plastic and Reconstructive Surgery.

## TREATMENT OF ACNE VULGARIS WITH OMNILUX BLUE IN ASIAN SKIN TYPE

DR HAROON NABI

LAHORE MEDICAL AND DENTAL COLLEGE

Dr Haroon Nabi. reports on a study looking at the use of 20% 5-Aminolaevulinic acid in combination with Omnilux blue in darker skin types.

A total number of 50 patients with mild to moderate acne vulgaris were enrolled onto the study after informed consent.

Twenty percent 5-Aminolaevulinic acid was applied to the subjects skin and left in contact for 20 minutes (subjects remained in a darkened room during this time).

After incubation the test area was exposed to Omnilux blue for 20minutes ( $48J/cm^2$   $40mW/cm^2$ ). Subject tolerance and adverse events were recorded. All the subjects were assessed 4 weeks after the therapy and then monthly for six months. The following parameters were recorded.

- Acne Lesion count and grading
- Background facial erythema
- Subjective grading
- Photography

All of the patients tolerated the treatment very well with 70% of patients showing complete clearance of acne, 20% showing significant improvement and 10% showing moderate of no improvement. Minimal side effects were recorded. Those noted with any significance were mild erythema and 5% of patients showed some hyperpigmentation that resolved within 10-14 days. In conclusion, Omnilux blue in combination with 5 - Aminolaevulinic acid is a safe, effective and reproducible treatment modality with minimal or self regulating side effects.



## RESTORATION OF SCALP HAIR USING A COMBINATION OF A COLD-BEAM LASER WITH OMNILUX REVIVE

DR BARRY WEISS, M.D., F.A.C.S

ADVANCED MEDICAL INSTITUTE, NORTH CAROLINA, US

Initial work by Prasan Pandite and Dr Barry Weiss, M.D., F.A.C.S Advanced Medical Institute, North Carolina, US, has shown encouraging results in Hair restoration using Omnilux revive in combination with a Swedish-made Laser Hair Care cold-beam laser.

The therapy involves initial weekly treatments with Omnilux revive and the cold-beam laser over the first 5 weeks, followed by a further weekly laser treatments. Finally, a monthly treatment of the laser is administered from 4 – 10 months.

Dr Weiss has seen extremely encouraging results, with subjects exhibiting 3 primary benefits, dramatic reduction/cessation of abnormal hair loss, improved texture & thickening of existing hair and growth of new hair from viable hair follicles.

Dr Weiss has seen success for around 85% of clients, with most seeing results within the first 3-4 months, and new growth being seen between months 6-12, as well as continued growth after completion of treatment program.

***“Unlike the use of Rogaine or Propecia, once the treatment program is completed, clients retain the benefits of treatment for an indefinite period of time, and do not require a continuous daily maintenance program for the rest of their lives.”*** Commented Dr Weiss.



13/08/04

25/08/05

Before and After photographs of the hair restoration pilot study, North Carolina, United States.