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A BRIEF SUMMARY OF SOME MEDICAL PUBLICATIONS AND SCIENTIFIC RESEARCH

• THE USE OF POLYCHROMATIC POLARISED LIGHT BIOPTRON IN PHYSIOTHERAPY

Polychromatic, polarized light therapy compared with SHORT WAVE DIATHERMY. Humeroscapular peri-arthritis, trigeminal neuralgia, neuralgia of the intercostals nerves, tendovaginitis antebrachi, etc. Pain control using light therapy.

Source : ACADEMY OF MILITARY MEDICINE. CLINIC for PHYSICAL MEDICINE and REHABILITATION. DR M. ANTONIC. SEPT 1990. BELGRADE, YUGOSLAVIA.

• AVOIDING SURGERY IN THE TREATMENT OF DEEP DERMAL BURN WOUNDS USING POLARISED LIGHT

“The results of this study demonstrate that polarized light is very useful in the treatment of deep dermal burn wounds. It accelerates wound healing and at the same time produces less hypertrophic scars. The results of this study clearly demonstrate that polarized light therapy seems to be a valuable alternative for the operative treatment of deep dermal burn wounds, with even better aesthetic and functional results”.

Source : BRITISH JOURNAL OF PLASTIC SURGERY, APRIL 2002. Stan Monstrey, MD, PhD, FCCP, Koen Van Landuyt, MD, FCCP, Koen Depuydt, MD, Phillip Blondeel, MD, PhD, Henk Hoeksema.

• THE USE OF POLARISED POLYCHROMATIC NON-COHERENT LIGHT ALONE AS A THERAPY FOR VENOUS LEG ULCERATION

“Phototherapy treatments were given once a day for 8 minutes during 4 weeks. All ulcers except one (99%) had a positive value for the change in healing area at the end of 4 weeks. Mean overall healing rate was 3.53 sq cm per week. No adverse side effects were observed. Polarized,

polychromatic light therapy applied as a monotherapy was associated with positive healing rates in patients with venous leg ulcers. It is a simple and non-invasive treatment...”.

Source : JOURNAL OF WOUND CARE, VOL 12, No 1, JANUARY 2003. M. LENS, MD, PhD - UNIVERSITY OF OXFORD, L. MEDENICA, MD - UNIVERSITY OF BELGRADE.

• OPPOSITE EFFECT OF LINEARLY POLARISED LIGHT ON BIOSYNTHESIS OF INTERLEUKIN-6 IN A HUMAN LYMPHOID CELL LINE AND PERIPHERAL HUMAN MONOCYTES

The effects of linearly polarized light and diffuse light on the in vitro interleukin-6 (IL-6) production in a human B Lymphoma cell line (BMNH) and peripheral monocytes of healthy volunteers are compared.

Source : CELL BIOLOGY INTERNATIONAL. 2002. VOL 26, no 3. M. FENYO, J. MANDL, A. FALUS - DEPT OF MEDICAL CHEMISTRY, MOLECULAR BIOLOGY AND PATHOBIOCHEMISTRY, SEMMELWEIS MEDICAL UNIVERSITY.

• PROMOTION OF WOUND HEALING BY IRRADIATION WITH POLARISED LIGHT

“Clinical experience is reported in the treatment of intransigent wounds with polarized light of defined energy content.. Acceleration of granulation formation and epithelialisation , and reduction of both wound secretion and wound pain were observed” Main indications for application discussed.

Source : DIE MEDIZINISCHE WELT, 1986. VOL 37. DR A.D. STACKER - HEAD OF SURGICAL DEPT, ST JOSEPH HOSPITAL, BREMERHAVEN, GERMANY.

• THE EFFECT OF POLARISED LIGHT ON WOUND HEALING

“The results of this study demonstrated that polarized light had a beneficial effect on the healing of these standardized wounds, resulting in a faster epithelialisation and an improved quality of early scar tissue formation”.

Source : EUROPEAN JOURNAL OF PLASTIC SURGERY. ACCEPTED FOR PUBLICATION 27 NOV, 2000. PUBLISHED ONLINE. HOEKSEMA, DEPUYDT, VAN MAELE, VAN LANDYT, BLONDEEL - DEPT OF PLASTIC SURGERY, UNIVERSITY HOSPITAL, GENT, BELGIUM.

• SINGLE SKIN EXPOSURE TO VISIBLE POLARISED LIGHT INDUCES RAPID MODIFICATION OF ENTIRE CIRCULATING BLOOD

1. IMPROVEMENT OF RHEOLOGIC AND IMMUNE PARAMETERS.

“We have found that exposure of a small skin area of healthy volunteers to visible incoherent polarized (VIP) light in therapeutic doses induces a rapid structural-functional modification of erythrocytes, leukocytes, and some plasma components in the whole circulating volume of blood.....”.

Source : PROGRESS IN BIO MEDICAL OPTICS. SEPT 1988. PUBLISHED BY THE INTERNATIONAL SOCIETY FOR OPTICAL ENGINEERING. SAMOILOVA, OBOLENSKAYA, VOLOGDINA, SNOPOV & SHEVCHENKO - INSTITUTE OF CYTOLOGY, RUSSIAN ACADEMY OF SCIENCES.

• THE EFFECT OF POLARISED LIGHT ON THE RELEASE OF GROWTH FACTORS FROM THE U-937 MACROPHAGE-LIKE CELL LINE

“The results obtained suggest that the exposure of U-937 cells to polarized light is followed by the release of substances.... that stimulate the proliferative activity of fibroblasts”.

Source : RESEARCH REPORT - GUY’S HOSPITAL, LONDON, UK. TISSUE REPAIR RESEARCH UNIT, DIVISION OF ANATOMY & CELL BIOLOGY. BOLTON, DYSON, AND YOUNG, 1992.

• EFFECT OF POLARISED LIGHT IN THE HEALING PROCESS OF PRESSURE ULCERS

“This trial demonstrated the effectiveness of polarized light therapy in healing 1st, 2nd and 3rd grade pressure ulcers. When polarized light treatment was added to conventional ulcer therapy, rapid changes in appearance and size with complete healing in half of the cases and accelerated partial healing in the remaining cases appeared within 1 - 2 weeks

Source : INTERNATIONAL JOURNAL OF NURSING PRACTICE. 2002. VOL 8, 49-55. PANGIOTA IORDANOU RN, PGDHSA, ANA, BsC (Nurs), PhD. G BALTOPOULOS - PROFESSOR OF CRITICAL CARE ATHENS UNIVERSITY SCHOOL OF NURSING, M. GIANNAKOPOULOU BsC (Nurs), PhD - ATHENS UNIVERSITY.

• EFFECT OF VISIBLE LIGHT ON SOME CELLULAR AND IMMUNE PARAMETERS

“... visible light provokes the release of some biological mediators (cytokines) from the immune competent cells and in this way stimulates the natural resistance of an organism. Similar to UV radiation and without the negative effect of suppressed natural killer cell activity, the application of visible light, preferably linearly polarized light (LPL), for the extracorporeal exposure of human blood is suggested”.

Source : JOURNAL OF IMMUNOLOGY & CELL BIOLOGY. 1995. VOL 73, 239 - 244. KUBASOVA, HORVATH, KOCSIS, and MARTA FENYO. FREDERIC JOLIOT-CURIE NATIONAL RESEARCH INSTITUTE FOR RADIOBIOLOGY AND RADIOHYGIENE, BUDAPEST, HUNGARY.

• **HYPOTHETICAL PHYSICAL MODEL FOR LASER BIOSTIMULATION**

“Polarized light reorders the polar heads of the lipid bi-layer in the cell membrane, the lipid bi-layer being near phase transition. This change in the quality of the cell membrane influences all the processes closely connected with it. These process modifications may yield an explanation for bio-stimulation”.

Source : OPTICS AND LASER TECHNOLOGY. FEBRUARY 1982. KERTESZ, FENYO, MESTER & BATHORY.

• **INVESTIGATIONS ON BIOLOGICAL EFFECT OF POLARIZED LIGHT**

“...the favorable healing effects induced by polarized light and experienced in the clinical practice (surgery, rheumatology) were attributable primarily to the changes in the cell membrane”.

Source : JOURNAL OF PHOTOCHEMISTRY AND PHOTOBIOLOGY. 1988. VOL 48, no 4. KUBASOVA, FENYO, SOMOSY & GAZSO - FREDERIC JOLIOT-CURIE NATIONAL RESEARCH INSTITUTE FOR RADIOBIOLOGIE AND RADIOHYGIENE, BUDAPEST, HUNGARY.

• **VISIBLE LIGHT INDUCED CHANGES IN THE IMMUNE RESPONSE THROUGH AN EYE-BRAIN MECHANISM (PHOTONEUROIMMUNOLOGY)**

This publication discusses biological changes induced by exposure to visible light through the eyes, reviews progress in the field of photoneuroimmunology and explores possible areas of future research.

Source : JOURNAL OF PHOTOCHEMISTRY AND PHOTOBIOLOGY. 1995. VOL 29, 3-15.
JOAN E. ROBERTS - FORDHAM UNIVERSITY, NEW YORK, U.S.A.

• **TREATMENT OF LEG ULCERS WITH POLARISED LIGHT**

Reports on the positive effects experienced in wound healing with polarized light.

Source : PHLEBOLOGIE UND PROKTOLOGIE. 1985. VOL 14, 96-97. DR W. STEGMAN -
SENIOR PHYSICIAN AND MEDICAL DIRECTOR HEILANSTALT FUR BEINLEIDEN OF
THE LANDESVERSICHERUNGSANSTALT, HAMBURG, GERMANY.

• **MYOFIBROTIC PAIN AND ITS THERAPY BY EVOLITE (BIOPTRON)**

Extensive reports on the efficacy of VIP light therapy on soft tissue pain syndromes,
myofibrosis, and general physiotherapy.

Source : RESEARCH INSTITUTE OF THE HUNGARIAN COLLEGE FOR PHYSICAL
EDUCATION. DR PETER APOR, MARTHA FENYO, GYOZO FEKETE.

• **BIOPTRON LIGHT THERAPY AND THORACOPHRENOLAPAROTOMY
WOUND HEALING IN PATIENTS OPERATED DUE TO CARDIAC
CARCINOMA**

CONCLUSION: "...we found that the application of BIOPTRON PILER therapy significantly
decreases the possibility of seroma or infection of the wound. No side effects of this therapy
have been noticed. Application of this type of wound therapy significantly shortens the
postoperative hospitalization. Finally, we can conclude that PILER (BIOPTRON) light therapy
should be added to the standard treatment of all surgical wounds in patients operated due to
cardiac carcinoma. Also, we can conclude, that since we treated one of the most demanding
groups of surgical patients, that since our results indicate excellent results, PILER (BIOPTRON)
light therapy could be successfully used in almost all kinds of surgical wounds".

Source : 4TH INTERNATIONAL GASTRIC CANCER CONGRESS, NEW YORK.
APRIL/MAY 2001. PRESENTATION BY SIMIC, PESCO, BJELOVIC & STOJAKOV - DEPT
OF ESOPHAGOGASTRIC SURGERY, FIRST SURGICAL UNIVERSITY HOSPITAL.

• **AVOIDING SURGERY IN THE TREATMENT OF DEEP DERMAL BURN
WOUNDS USING POLARISED LIGHT**

“Polarized light accelerates wound healing and at the same time results in less hypertrophic scarring. Moreover, in many cases, no scarring was noted. Our results clearly demonstrate that phototherapy is a valuable alternative for the surgical treatment of deep dermal burn wounds. Using polarized light in the treatment of 3rd degree burns is not advisable, and absolutely no alternative for surgery”.

Source : DEPT OF PLASTIC SURGERY, UNIVERSITY HOSPITAL, GENT, BELGIUM. PRESENTED AT THE 10th ANNUAL MEETING OF THE EUROPEAN ASSOCIATION OF PLASTIC SURGEONS, MADRID, SPAIN, MAY 21, 1999. DEPUYDT, HOEKSEMA, MONSTREY, VAN LANDUYT, BLONDEEL.

• CASE STUDIES AND CLINICAL REPORTS ON THE USE OF BIOPTRON (VIP) LIGHT THERAPY IN RHEUMATOLOGY

Clinical assessment of the efficacy of VIP light therapy in rheumatology - epicondylalgia, carpal tunnel syndrome, synovitis, arthritis of the thumb, angiitis in RA, Reynaud's disease, arthritis in the knee, cervical pain, cervicobrachial neuralgia, cervical syndrome, rachialgia, osphyalgia, ischialgia, rheumatoid arthritis (RA).

Source : RHEUMATOLOGY AND REHABILITATION CENTRE - IOANNIS STASINOPOULOS - DIRECTOR, SPECIALISED RHEUMATOLOGIST.

• IMMEDIATE AND DELAYED CHANGES IN ACTIVITY OF LEUKOCYTES IN THE ENTIRE BLOOD CIRCULATION AS A TRIGGER MECHANISM OF SYSTEMIC IMMUNOMODULATION FOLLOWING THE EXPOSURE OF SKIN TO VISIBLE POLARISED LIGHT

Exposure of skin surface to VIP light at therapeutic doses is accompanied by immediate increase in phagocytosis of circulating monocytes and neutrophils, by stimulation of NK-cell cytotoxic activity in respect to human malignant K-562 cells, and by accumulation of granulocytes of bactericidal cationic proteins....

Source : RESEARCH ARTICLE - INSTITUTE OF CYTOLOGY OF THE RUSSIAN ACADEMY OF SCIENCES. OBOLENSKAYA, SAMOILOVA & SNOPOV.