

ALTERNATIVE HEALTH & REHAB. CENTRE, PLLC
Alternative, Complimentary and Preventive Health Care Services
A Treatment Centre with a Holistic Personal Approach.
Open: 8am-8pm Monday-Friday, 9am-6pm Saturday, By Appointment.
2284 S. Ballenger Hwy, Suite F, Flint, MI. 48503. Ph: (810) 235-5181.
Web: www.ahrc.us

TERRAQUANT 2000

Red Light, Infrared, Pulsed Low Level Laser and Magnetic Therapy all in one therapy.

Low Level Light Therapy (LLLT)

With the low power nature of pulsed low level laser light, the effects are biochemical and not thermal. Thus this system does not cause invasive heating or heat damage to living tissue, but instead adds energy to biochemical processes.

These distinct effects are known to occur when using low level light therapy:

- A) Growth factor response within cells and tissue, as a result of increased ATP and protein synthesis,
- B) Pain relief as a result of increased endorphin release, increased serotonin and suppression of nociceptor action,
- C) Strengthening of the immune system response via increasing levels of lymphocyte activity and through photo modulation (energy added via light) of blood.
- D) Acupuncture point stimulation and release of endorphins.
- E) Reduce pain by modulating the levels of prostaglandins and nitric oxide on peripheral nerves.

Low level light therapy accelerates repair and healing in acute, non-healing, chronic injured tissue and their associated resulting conditions.

Parameters for Use

Three major and one minor parameters are important to achieve the best possible therapeutic effects when using light therapy: **Wavelength, Power, Time, and Pulsing Frequency.**

Quantum Therapy

Low Level Laser Therapy utilizes low-energy and safe electromagnetic radiation that has beneficial effects on both the intracellular (within) and intercellular (between) processes. The Terraquant machine incorporates the major principle of multi-factor therapy and brings together the most effective modes of Red Light, Wide-band Infrared, Magnetic Field and Low Level Pulse Laser therapy.

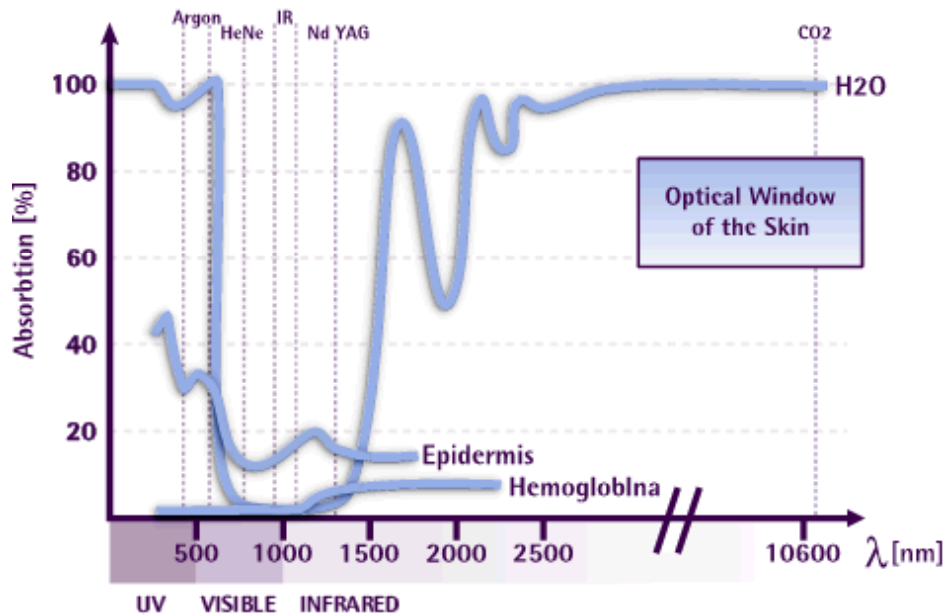
Red Light - shallow depth: up to 1 inch

- Readily absorbed by the mitochondria and stimulatory to the cells energy production.
- Excellent source of stimulation of growth and repair factors.
- Red light is the best for minor wound healing and superficial conditions.

Wide-band Infrared (Invisible) - medium depth: up to 4 inches

- Absorbed through the cell walls (acting differently between cells) and therefore cell response is more wavelength specific in the infrared range, responding differently to different wavelengths
- More penetrative through the tissue, especially the 800nm range, therefore this range is selected for treatment through intact skin and pain relief.
- Cluster probes with a range of wavelengths offer the best of both worlds.

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LLLT cont.**



Low Level Laser Light: up to 5 inches:

- Provides Pain relief thus reducing medication needs.
- Improves blood circulation.
- Reduces Swelling.
- Stimulates cell growth.
- Stimulates cell metabolism (activation of ATP and protein synthesis).
- Stimulates Enzyme synthesis.
- Enhances collagen synthesis.
- Provides antioxidant effect.
- Stimulates immune system.
- Promotes tissue regeneration.

LLLT is used in 30 countries focusing on numerous solutions and therapies:

Pain Relief Solutions

Shoulder pain
Tennis elbow
Many other indications

Acute, sub-acute and chronic pain relief

Carpal tunnel
Arthritic pain
Back pain
Fibromyalgia

Anti Aging and Cosmetics Solutions

Varicose Veins
Wrinkles

Cellulite
Psoriasis

Acne
Many other indications

Wound Management Solutions

Skin ulcers
Postoperative wound care
Many other indications

Diabetic ulcers
Tissue repair and cell regeneration

Burns

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An overview of the treatment programs

After consultation and examination/review we will choose between 5 different programs, which have been preset for treatment of different conditions. Each program uses different pulse frequencies, depth, light combinations and treatment session durations. Variation of the pulse frequencies alters the depth and intensity of penetration of the therapy. To treat an area the emitter is simply held directly on the painful area, or is moved in a slow circular motion over the area.

Pain Reduction

LLLT can significantly reduce pain in 12 to 16 treatment sessions. The procedures can be performed once or twice daily. Each treatment procedure takes between 12 and 15 minutes.

Spinal conditions (pain):

Osteochondriosis.	Scoliosis.	Intervertebral disk hernia.	Post-traumatic pain.
Carriage disorders.	Radiculitis.	Ischialgia	Arthritis.
Arthrosis.	Coxarthrosis.	Contractures.	Calcaneal spurs.
Myositis			

It is important to emphasize that this therapy does not exclude other conventional or alternative therapies. On the contrary, combining it with other Centre therapies, will result in a quicker and more rapid recovery and may enable the reduction in doses of anti-inflammatory and muscle relaxant drug therapy.

So what does it do :

Increases the speed, quality and strength of cell tissue repair, increases blood supply to the affected area, stimulates the immune system, stimulates nerve function, develops collagen and muscle tissue, helps generate new healthy cells and tissue and promotes faster wound healing and clot formation. This therapy can even provide significant results for the elderly, patients suffering from long-term illness and cell damage.

Pulsed Infrared (905nm) penetrates 10–13cm (4–5 inches) deep and has strong stimulating effects on blood circulation membranes and intracellular metabolism. Laser emits energy in a form of photons; these particles of energy are absorbed by cells and tissue resulting in conversion of light into biochemical energy. Multiple physiological responses are thereby initiated and normal cell function is restored. This process is curative and eliminates symptoms (i.e. pain, edema, etc).

Pulsed infrared (875nm) penetrates shallower tissue depth.

Red light (660nm) penetrates smaller tissue depths and has a beneficial anti-inflammatory effect.

Magnetic field keeps ionized molecules of tissue in a dissociated stage, thus enhancing the energy potential at the molecular and cellular levels. Magnetic field also provides energy-mediated protection of organisms against environmental impacts such as climatic factors and electromagnetic fields.

Peak pulse power of up to 25,000 mW and average power of ~7.5mW – achieves high depth of tissue penetration while providing gentle average power levels.

Laser light energy can strengthen damaged cells. Using photochemical processes, laser light inserts bio-photons into damaged cells. The cells begin to produce energy (ATP), which improves their function, assists their division, strengthens the body's immune system, and causes the secretion of various hormones. The tissues are healed, and the pain reduces.

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LLLT cont.

If damaged cells have died, the bio-photons help the division of neighboring cells, generating new tissues, and thus bring about healing.

- Promotes healing in many conditions because it penetrates the skin, increases the ATP and activates enzymes in the targeted cells.
- Growth factor response within the cells and tissue as a result of increased ATP and protein synthesis.
- Improved cell proliferation.
- Pain relief as a result of increased endorphin release.
- Strengthening the immune system response via increasing levels of lymphocyte activity.

Questions:

What is Low Level Light Therapy (LLLT)?

It is used to increase the speed, quality and strength of tissue repair, resolve inflammation and give pain relief. Laser therapy has been found to offer superior healing and pain relieving effects compared to other electrotherapeutic modalities such as ultrasound, especially in chronic problems and in the early stages of acute injuries. Laser therapy is a complete system of treating muscle, tendon, ligament, connective tissue, bone, nerve, and dermal tissues in a non-invasive, drug-free modality.

It has been widely used in Europe for over thirty five years in addition to being the subject of numerous studies with over 3,500 scientific papers published worldwide. There have been no reported side effects to LLLT treatments, which are painless and non-toxic.

People worldwide are realizing the benefits of LLLT more than ever before and at the same time, American consumers are increasingly interested in alternative treatments. The LLLT used at this Centre is the TerraQuant and is without any known side effects.

For a long time now L.A.S.E.R. (Light Amplification by Stimulated Emission of Radiation) was an acronym and today a word of common use. The word LASER is the name of a device that projects intense radiation of the light spectrum. It produces a beam of light in which high energies can be concentrated. Laser light has unique physical properties, which no ordinary light has. The unique properties of coherence and monochromaticity are the key to why laser light is so effective compared to other kinds of light in pain reduction and healing. Laser therapy, also known as phototherapy and low level laser therapy, involves the application of low power coherent light to injuries and lesions to stimulate healing and reduce pain.

What are the major principles of the Low Level Laser Therapy?

- 1) Pulsed infrared laser radiation penetrates tissues 4-5 inches (10-13 cm) deep and has strong stimulating effects on blood circulation, cell membranes, regenerating the cell.
- 2) Continuous incoherent infrared radiation penetrates shallower tissue depths and has a broader spectrum compared to laser radiation.
- 3) Pulsed red light is identified with beneficial anti-inflammatory effect (especially in areolar tissue). According to long-term studies, pulsed red light is known to improve psycho emotional tonus, despite the fact that it penetrates smaller tissue depths. In addition, red light makes a treated area visible and has a local warming and psychotherapeutic relaxing effect.

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LLLT cont.

4) Magnetic field generation keeps ionized molecules of tissue in a dissociated stage, thus enhancing the energy potential at the molecular and cellular levels. Magnetic field generation also provides energy-mediated protection of organisms against environmental impacts such as climatic factors and electromagnetic fields.

The effects of laser therapy are photochemical in general and with super-pulsed lasers such as the TerraQuant Laser also photomechanical. Photons enter the tissue and are absorbed into the cell's mitochondria and the cell membrane by chromophores. These chromophores are photosensitizers that generate reactive oxygen species following irradiation thereby influencing cellular redox states and the mitochondrial respiratory chain. Within the mitochondria, the photonic energy is converted to electromagnetic energy in the form of molecular bonds in ATP.

Cell membrane permeability increases, which promotes physiological changes to occur. These physiological changes affect macrophages, fibroblasts, endothelial cells, mast cells, bradykinin, and nerve conduction rates. Clinical and physiological effects are obtained by the way in which the tissues absorb laser radiation.

Tissue absorption depends on the wavelength of the beam itself and the power to ensure that the laser energy reaches the target tissue at the necessary clinical levels. The use of an improper wavelength laser would not penetrate into the tissue to reach the target area. Furthermore, even if one has a laser with the proper wavelength, if the device does not have enough power to drive the energy into the tissue, the target area may not realize the potential benefits.

Each type of laser emits light at a very specific wavelength which interacts with the irradiated tissue. It also acts in particular with the chromophores present in the tissue, but in a different way. A chromophore, intrinsic or extrinsic, is any substance, colored or clear, which is able to absorb radiation. Among the endogenous chromophores, water and hemoglobin, nucleic acid and proteins can be listed. Among the exogenic chromophores we can instead find porphyrins and hematoporphyrins, which are injected into the organism. These are described as photosensitizers because they fix themselves to the tissue making it photosensitive at specific wavelengths

What are the advantages of LLLT.

This versatile device has a variety of uses in rural, field and military conditions, schools, sport centers, health clinics, industrial enterprises and correctional facilities.

- Completely safe - quantum energy released by TerraQuant does not exceed 1.5 electron-volts, which is not sufficient to impair natural processes and disrupt polymer intermolecular links.
- Increases efficiency of any conventional drug therapy.
- Allows significant reduction of drug dosage and in some cases alleviates the need for drug therapy all together.
- Leads to 2-3 times faster recovery and rehabilitation.
- Cuts inpatient care costs by reducing time required for treatment.
- Offers more possibilities for outpatient treatment.
- No side effects.
- Non-invasive.

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LLLT cont.

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What are the Biological Effects of Laser Light?

Laser Source -> Direct Effects: Bio-chemical, Bio-electrical and Bio-energetic +
 Indirect Effects: Microcirculation Stimulus, Trophic Cellular Stimulus +
 General Therapeutic Effects: Analgesic effect, Anti-inflammatory, Anti-edemic factors, Normalization of circulation and Bio-stimulating effect.

How does laser light act as a healing stimulus?

Biological Effects of Low Level Light Lasers can strengthen damaged cells. Using photochemical processes, laser light inserts bio-photons into damaged cells. The cells begin to produce energy (ATP), which improves their function, assists their division, strengthens the body's immune system and causes the secretion of various hormones. The tissues heal, and pain disappears. The bio-photons also help the division of neighboring cells, generating new tissues, and bring about healing. Lasers commonly in use for laser therapy (LT) operate at a wavelength between 600 and 1060 nanometers (nm). Laser devices in this range are known to be safe because they do not include wavelengths in the lower end of the spectrum, which includes X-RAYS and Gamma Rays that cause destructive ionization in the cell.

How does Wavelengths of light effect Impact of Penetration and Absorption?

Portions of these diode laser wavelengths are visible, from 600 up to approximately 780 or 820 nm. Humans have a declining ability to see light above approximately 820nm. Photon energy increases as the wavelength decreases; conversely, penetration through the skin increases as wavelength increases. Thus, certain conditions may benefit from lower wavelengths where most of the energy is absorbed at the surface, and other conditions may benefit more from higher wavelengths that permit deeper penetration. It follows that an ideal wavelength for treating most conditions would be in the midrange.

Can Light Therapy be used for pain management?

Yes, Laser Light promotes healing in many conditions because it penetrates deep into the tissues, transforming a cell from unstable/unhealthy condition! Low Level Light Therapy utilizes low-energy and safe electromagnetic radiation that has beneficial effects on both the intracellular and intercellular processes. Laser energy can strengthen damaged cells. Using photochemical processes, laser light inserts bio-photons into damaged cells. The cells begin to produce energy (ATP), which improves their function, assists their division, strengthens the body's immune system, and causes the secretion of various hormones. The tissues are helped in their healing, and pain tends to disappear as the cells heal. If damaged cells have died, the bio-photons help the division of neighboring cells, generating new tissues, and thus bring about collateral healing.

- Low Level Light Therapy increases the ATP (cell energy) and activates enzymes in the targeted cells.
- Growth factor response within the cells and tissue as a result of increased ATP and protein synthesis.
- Improved cell proliferation.
- Pain relief as a result of increased endorphin release.
- Strengthening the immune system response via increasing levels of lymphocyte activity.

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The most popular use of light therapy and LED therapy is the treatment of sports injuries, soft tissue and joint conditions. Found below are a few reasons why many of the world's professional athletes use light therapy to speed their recovery.

- There is more published clinical and physiological evidence supporting the use of Laser and LED photobiomodulation for soft tissue injuries and joint conditions than any electrotherapy modality.
- It's quick and simple to apply.
- Can be used immediately after injury, over pins and plates.
- It's considered the safest "electrotherapy" available by research experts.
- Has a proven worldwide track record of effective and safe treatments.

Main uses of Light therapy in Sports.

- Pain relief.
- Express diagnostic of pathological changes.
- Treatment of immunodeficiency (attribute of intensive training).
- Increase of stamina.
- Improvement of psycho-emotional and stress resistance.
- Prophylactic of seasonal and chronic diseases.
- Correction of homeostasis in the process of training (increase of blood supply and energy supply of muscles).
- Fast body adaptation to changes in climate and time.
- Optimization of processes of recovery.
- Acceleration of recovery after the injury.
- Wound care and healing.
- Treatment of professional joint diseases.
- Elimination of pathology of effect in athletes (i.e. mistakes of training process).
- Treatment of accompanied conditions/diseases.

The positive energy from the sun is the source of all life on Earth. The super pulsed laser light, infrared and red spectrum light from the TerraQuant Laser has similar healing properties. As we age, skin cell function naturally slows, as do the processes that keep our skin youthful looking. The TerraQuant Laser permeates the top layers of the skin, sending a message to protein enzymes and cells. That message speeds up the cellular metabolic process which activates our skin cells to produce more cellular energy (ATP).

What are other uses of light therapy?

- | | | |
|-----------------------------|--------------------------------------|----------------------|
| • Wrinkles | Varicose Veins appearance | Cellulite appearance |
| • Acne symptoms relief | Psoriasis symptoms | Fungus symptoms |
| • Eczema symptoms | Burns | Diabetic ulcers. |
| • Postoperative wound care. | Tissue repair and cell regeneration. | Skin ulcers. |

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Light Therapy Evidence

Scientific Evidence: Summary of scientific and clinical evidence using TerraQuant Laser Light Therapy prepared by Prof Rémy Guibert, MD MSc.

LLLT produced:

In vitro increases in cell growth of 140-200% in mouse-derived fibroblasts, rat-derived osteoblasts and rat-derived skeletal muscle cells, and increased by 155-171% growth of normal human epithelial cells.

Wound size decreased up to 36% in conjunction with hyperbaric oxygen HBO in ischemic rat models.

LLLT produced improvement of greater than 40% in musculoskeletal training injuries, and decreased wound healing time.

Reduced by 47% pain of children suffering from oral mucositis.

In vitro, LLLT inhibits bacterial growth of E.coli, Staphylococcus aureus and Pseudomonas aeruginosa.

A randomized double-blind placebo-controlled clinical trial, on thirty consecutive patients with diabetic ulcers or gangrenes and elevated levels of glycosylated hemoglobin, has demonstrated an increase in skin microcirculation which was an athermic effect, in patients with diabetic microangiopathy.

A clinical trial of LLLT, with the combined use of HBO, showed 81% healing of diabetic foot ulcers in patients who previously did not respond to a comprehensive treatment program. The authors conclude that this modality is safe, simple and inexpensive.

A placebo-controlled clinical trial, studying the efficacy of combined phototherapy with LLLT in the management of venous ulceration when used in conjunction with standardized nursing intervention, showed clinical difference in wound healing rate and a continued reduction in wound size at post-irradiation.

A double-blind, placebo-controlled clinical trial of low energy photon therapy (LEPT)(Red and Infrared) in venous leg ulcers showed a decrease in ulcer area (compared to baseline) of 193.0 mm² in the LEPT group and of 14.7 mm² in the placebo group respectively (P = 0.0002).

A randomized, controlled study examined the effects of infrared and red pulsed monochromatic light with varied pulsations and wavelengths, in addition to standard treatment, on the healing of pressure ulcers. Patients treated with pulsed monochromatic light had a 49% higher ulcer healing rate, their mean ulcer area was reduced to 10% after 5 weeks compared with 9 weeks for the controls.

A controlled clinical trial of patients with two pressure ulcers (one for polarized light, one as control) examined the effect of polarized light on pressure ulcers of 1st, 2nd and 3rd grades. Pressure ulcers subjected to extra treatment with polarized light in the early stages showed significantly greater improvement in the healing process than the control ulcers.

LLLT - Case Studies

Pulsed high-frequency, high peak power electromagnetic energy has been shown to increased healing time in patients with Stage I ulcers unhealed within 4 to 12 weeks, Stage II within 10-18 weeks and those with Stage III ulcers unhealed within 16 to 24 weeks.

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Wound Healing

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Pain Relief

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Chiyuki Shiroto - Shiroto Clinic, Goshogowara City, Aomori.
Kelichi Ono - 2nd Dept of Surgery, School of medicine, Hirosaki University Hirosaki. oshio
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Steven Amoils - University of Cincinnati Family Medicine Dept, 231 Bethesda Ave, Cincinnati Ohio 45267 USA. John Kues - Cincinnati Family Medicine, 10661 Loveland-Madeira Road Loveland Ohio 45140 USA.
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- **The effect of Laser Irradiation upon Microstimulation Evoked Pain.**
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- **The effect of Low Level Laser Irradiation of Ipsilateral ERB'S point upon tourniquet-Induced Ischaemic pain: A single blind study.** B Mokhtar, G D Baxter, J M Allen & A J Bell. Biomedical Sciences Research Centre, University of Ulster, Jordanstown BT 37 0QB N.Ireland. 24 Male patients age 18-26.
- **Low Level Laser Therapy (LLLT) of Tendinitis and Myofascial Pains. A randomised, double blind controlled study.** Mimmi Logdberg-Andersson - Akersberga Health Care Centre Sture Mutzell - Danderyd University Hospital. Ake Hazel - Vaxholm Health Care Centre Stockholm Sweden. 176 Patients - 34 had Myofascial Pains, 142 had Tendinitis. Addressee for correspondence: Sture Mutzell, Danderyd University Hospital 5-182 87 Danderyd Sweden. 03/07 Rep US 10-12-14, 1997 by LT Publishers, UK, Ltd. LASER THERAPY, 1997:9: 79-86
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Institute of Anesthesiology and Intensive Care, University of Padua and the Associazione Italiana per la Ricerca, l'Aggiornamento Scientifico, Padua Italy. Addressee for correspondence :Dr F Ceccherelli Istituto di Anestesiologia Rianimazione via C. Battisti 267, 35121 Padova Italia The Clinical Journal of Pain 5:301-304 copyright 1989 Raven Press Ltd, New York
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Tohru Mizokami, Kazuya Aoki*, Satoshi Iwabuchi*, Keiichirou Kasai*, Yasuyuki Yamazaki*, Takatoshi Sakurai*, Kanji Samejima* and Nobou Yoshii*
Alta Clinic 165-10 Terayama, Midori Ward, Yokohama City, Japan 226. *Second Department of Neurology, Ohashi Hospital, Toho University, Tokyo

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- **Somatosensory Trigeminal Evoked Potential Amplitudes Following Low Level Laser And Sham Irradiation Over Time**
Arthur J. Nelson, PT, PhD, FAPTA * & Mark H. Friedman, DDS + * Department of Biology, Physical Therapy Program, College of Staten Island, City University of New York, NY, and + Institute for Basic Research in Developmental Disabilities, Staten Island, N.Y., U.S.A.
- **Laser Therapy In The Treatment Of Dental Hypersensitivity — A Histologic Study And Clinical Application**
Aldo Brugnera Junior, DDS, Ph.D.1,2,3, Ana Eliza Garrini, DDS1, Antonio Pinheiro, DDS, Ph.D.2, Dilma Helena Souza Campos, DDS1, Elisângela Donamaria, DDS1, Fábio Magalhães, DDS1, Fatima Zanin, DDS1, Jesus Djalma Pécora, DDS3, Márcia Takamoto, DDS1 and Thereza Christinna Ladalardo, DDS1
1. School of Dentistry, Universidade Camilo Castelo Branco, São Paulo, SP, Brazil;
2. School of Dentistry, Universidade Federal da Bahia, Salvador, BA, Brazil;
3. School of Dentistry, Universidade de São Paulo, Ribeirão Preto, SP , Brazil
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Junichiro Kubota M.D. Department of Plastic and Reconstructive Surgery, Kyorin University School of Medicine, Tokyo, Japan.

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- **Clinical Application of GaAIs 830nm Diode Laser in treatment of Rheumatoid Arthritis**
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From the Department of Medicine, Division of Rheumatology-Immunology, The Woodruff Medical Centre, Emory University School of Medicine (J.A.G., J.C., N.B., J.G., W.McC., RVD., R.B., W.J.B., S.B.M., C.H.W., C.H.); the Emory University Clinic (L.P., H.H.); the Hand of Management Centre, Centre for Rehabilitation Medicine (B.P.); the Centre for Disease Control (H.C.); Atlanta, Georgia, and the A. Ward Ford Memorial Institute, Wausau, Wisconsin (M.M)
- **Laser Therapy of Rheumatoid Arthritis. Clinical and Morphological Study**
V.V Tsirko, P. Ja. Mulidiyarov, Ja. A. Sigidin The Institute of Rheumatology (dir. - member-corr. AMP of the USSR prof. V. A. Nasonova) AMP of the USSR, Moscow
- **A Double Blind Trial of the Effects of Low Level Laser in Rheumatoid Arthritis** Abstract no. 18 By: J Hall, A K Clarke, Royal National Hospital for Rheumatic Diseases, Bath, England

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- **Low Power Laser Therapy in Rheumatoid Arthritis**
Nina Palmgren, Griethe F. Jenson, Kamma Kaae, Marianne Windelin, Hans C. Colov
Departments of Rheumatology, Rehabilitation and Gynecology, Copenhagen County Hospital
Gentofte, University of Copenhagen, Denmark
Correspondence to Dr H. C. Colov, The Pain Clinic, Skodsborg Sanatorium, Strandvejen 134,
DK-2942 Skodsborg, Denmark.
- **Infrared Diode Laser in Low Reactive Level Laser Therapy (LLLT) for Knee Osteoarthritis** M. A. Trelles*, J. Rigau*, P. Sala*, G. Calderhead** and T. Ohshiro***
*Instituto Medico Vilafortuny, Cambrils (Tarragona), Spain, ** International Medical Laser
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Ottar Vasseljen Jr - Trondheim Fysikalske Institutt, SVERRES GT.3,7045 Trondheim. Berit
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AVH University of Trondheim, N-7055 Dragvoll Stig Larsen - Medstat P.b. 37 N-2011
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- **Successful Management of female office workers with "repetitive stress injury" or "carpal tunnel syndrome" by a new treatment modality - Application of Low Level Laser**
E Wong LEE J, Zu Cherman and D P Mason - Wester Heart Institute and St Marys Spine Centre, St Marys Medical Centre, San Francisco, CA, U.S.A and Head and Neck Pain Centre Honolulu HL, U.S.A Manuscript received: July 1997. Accepted for publication: September 1997. Laser Therapy, 1997;9: 131-136 09/97 Rep. US \$ 10-12-14 by LT Publishers UK Ltd.
- **Thermographic study of Low Level Laser Therapy for Acute-Phase Injury**
Yoshimi Asagai, M.D.1, Atsuhiko Imakiire, M.D.2, Toshio Ohshiro, M.D.3,
1. Shinano Handicapped Children`s Hospital Shimosuwa, Nagano, Japan
2. Department of Orthopaedic Surgery, Tokyo Medical University Shinjuku, Tokyo, Japan
3. Japan Medical Laser Laboratory, Shinanomachi, Tokyo, Japan
- **The Biological Effects of Laser Therapy and Other physical Modalities on Connective Tissue Repair Processes** Chukuka S. Enwemeka, P.T., Ph.D., FACSM, G. Kesava Reddy, Ph.D., Department of Physical Therapy and Rehabilitation Sciences, University of Kansas Medical Center, Kansas City, KS 66160-7601, USA
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- **Low Level Laser Therapy Of Soft Tissue Injuries Upon Sport Activities And Traffic Accidents: A Multicenter, Double-Blind, Placebo-Controlled Clinical Study On 132 Patients.** Zlatko Simunovic, M.D., F.M.H. (1), Tatjana Trobonjaca, M.D. (2) (1) Pain Clinic-Laser Center, Locarno, Switzerland; (2) 2 Laser Center, Opatija, Croatia. (3)
- **Treatment of the acute Periarthritis humeroscapular with laserpuncture.**
Odalys González Álvarez, Main Educational Clinic of Urgencies "Antonio Maceo", Cerro Municipality, Havana City.
- **Laserpharmacology and Achilles tendinopathy**
Paul Meersman, Private Laser and Sport Medical Center, Kapelle op den Bos, Belgium.
- **Level Laser Therapy In Tendon Injuries? - A Review Of In Vitro And In Vivo Trials**
J.M. Bjordal, C. Coupe University of Bergen, Dept. Physiotherapy Science, Bergen, Norway
- **Low Level Laser Therapy Can Be Effective For Tendonitis: A Meta-Analysis**
J.M. Bjordal, C. Coupe University of Bergen, Dept. Physiotherapy Science, Bergen, Norway

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Smoking Cessation

- **Laser-Acupuncture Detoxification (LASAC) Its Role In Smoking Cessation**
Tiziano A. Marovino P.T., MCPA, MAFC, ACSM, BAPE, BRLS, BHSc, Dip.P.T., M.Cl.Sc (pending) Former Director of Research & Development, World Laser Corporation, Vancouver, B.C., Canada Currently in Private Practice as a Research and Measurement Consultant, Sussex Physiotherapy Clinic, Mississauga, Ontario, Canada
- **Low Level Laser Therapy – Double blind study to assess the effectiveness of the therapy as a treatment for stopping smoking**
Tony Harrison, Natural Health Clinic, Bristol - UNPUBLISHED
- **Low Level Laser Therapy – Double blind study to assess the effectiveness of the therapy as a treatment for stopping smoking** Paul Lowe, Katherine Kerr, Middlesex University - UNPUBLISHED
- **Low Level Laser Therapy – Project Evaluation to assess the effectiveness of the therapy as a treatment for stopping smoking** Anna Sheridan, Laser Therapy Centre, Dumfries and Galloway, SW Scotland – UNPUBLISHED

Basic Facts:

Pain Free, Non-Invasive, No Known side effects,
FDA Cleared, Proven Clinical Results.
Over 3000 Clinical Studies Published Worldwide

Research Demonstrates (88% effective in the following areas):

Injuries heal faster by stimulating cellular metabolism in tissue regeneration and repair,
Anti-inflammatory: Improves blood circulation and lymphatic drainage,
Effective reduces pain syndromes by stimulating nerve regeneration and function,
Rapid cell reproduction and growth, Fast wound healing,
Improves immune response and reduces fibrous tissue formation.
Effective in: Anti-aging, cosmetic healing and hair growth.

Treatment Considerations (4-6 weeks schedule):

Acute Pain/ New condition:

Acute/pain level (9-10): 12-20 treatments, up to 3x's/day - 2 weeks,
Sub-Acute/pain level (6-8): up to 2x's/daily - 4 weeks (8-16 treatments),
Rehab./pain level (2-5): up to 3x's/week 12-16 treatments - 4 weeks.
Support care/pain level (1-2): 1x/week - 4 weeks, then 1x/2 weeks - 4 weeks.

Chronic/Anti-aging:

Chronic: Rehab level: 3x's/week for 4 weeks, then 1-2x's/week for 4 weeks,

Treatment effects are cumulative (add together).

Treatment session: 12-15 minutes of therapy with 1 minute rest every 3-5 minutes.

Cost:

\$15.00/treatment session - Single head.
\$25.00/treatment session - Dual heads.