Laser Report

Meditech INTERNATIONAL INCORPORATED Bioflex

WINTER 2006 ISSUE

In this issue of the Laser Report,

- four topics are covered.

The first is a dissertation on the common complaint of "back ache".

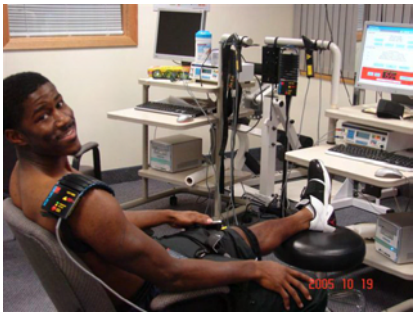
The second section presents a therapy for Herpes Zoster (Shingles).

The third topic is a continuation of the popular series "Social Commentary".

In the final section we preview the 4th annual International Low Intensity Laser Therapy Conference that will be held in Toronto from April 21st - 23rd, 2006 at the Marriott Bloor Yorkville hotel.

Professional Athletes Recently Treated with the Bioflex Professional System

Patrick Russell
Canadian National Track and Field Team
Decathlete



Nate Burleson
NFL Wide Reciever
Minnesota Vikings

Darren Sharper
NFL Safety
Minnesota Vikings

In the News at Meditech

On **November 16, 2005**, Meditech International Inc. opened a satellite clinic in downtown Toronto as a convenience to the increasing number of patients requiring therapy. The clinic is based at 111 Richmond Street West located in the financial and business district of the city.

On Saturday, September 25, 2005, Robert Bonakdar, M.D. Director of Scripps Center for Integrative Medicine and Member of the American Academy of Pain Management in a keynote address at the annual meeting, **personally and professionally endorsed the use of Low Intensity Laser Therapy (LILT) for the treatment of pain**. His slide demonstration featured the Bioflex Professional Unit, manufactured by Meditech International Inc., Toronto, Canada.

In **September 2005**, Meditech was pleased to supply two Bioflex Professional Systems to a member of the Royal Family of one of the emirates. This individual was so impressed with the treatment rendered on a visit to the U.S. that he immediately purchased two systems for personal use.

Meditech is pleased to announce that **Chuck Mooney** who for eight years served as head trainer for the Toronto Raptors and is a world renowned authority on physical assessment and training has joined our organization. Chuck has extensive experience as chief athletic therapist at the University of Toronto prior to joining the NBA Toronto Raptor organization and will play a major part in our efforts to extend the range of physical therapy services offered at all Meditech clinics.

www.bioflexlaser.com

BACK-ACHE

By Fred Kahn, MD, FRCS(C)

Over the millennia as man evolved from homo sapiens into homo erectus, he has been increasingly plagued by the all-inclusive term known as "back ache". Transformed over the centuries from an active hunter/farmer with a powerful musculature, based on the axiom of "survival of the fittest", the human race has become largely sedentary and in the age of technology, relatively immobile.

The result – muscle atrophy, diminished bulk, tone and flexibility; good posture is relegated to the past, and the spinal column literally collapses. This deterioration creates numerous biomechanical imbalances. The result of these developments places increasing stress on the vertebrae, discs and ligaments that form and maintain the basic infrastructure of the body.

The spine, which is the pillar of the architecture, is no longer supported by a vibrant musculature. This is comparable to the bricks and mortar around a steel skyscraper and when this breaks down it results in numerous pathological conditions which can be extremely painful and physically restrictive (Figure 1).

The inherent problems are compounded by weekend or periodic strenuous activities on the part of the individual whose tissues are dormant during the week and are then subjected to physical stress for which they are not prepared. The recommended "minutes" of stretching prior to activity is really of minimal help. This is one of the major mobility problems facing bipeds in the age of technology. As people live longer, tissues are also subjected to the "wear and tear" of the aging process, characterized as "degenerative osteoarthritis". The combination of disuse due to the sedentary factor and degeneration of the tissues as a result of aging, produces multiple problems of the joints, cartilage and soft tissues of the spine, for reasons which are readily apparent. The spine supports the weight of the upper body and the functional stress imposed by the lower body and by virtue of its perpendicular state the complexity of the discs, vertebrae, facets, etc. make it the largest and certainly the most vulnerable structure in the entire body.

As degeneration progresses there is increasing osteophyte formation, chronic and acute inflammation of the surrounding tissues, scar tissue formation, joint contracture, etc. Other more ominous complications accompany these events *(i.e. stenosis, a narrowing of the spinal canal with compression of the cord and the foramina through which nerve roots exit from the spinal canal)*.

In high level athletes the process is dramatically accelerated. Excessive exposure to high levels of activity speeds up the wear and tear phenomenon. It is not unusual in our practice to see fifteen year old gymnasts with spinal X-rays and symptoms that resemble someone in the 6th or 7th decade of life; a rather elementary conclusion one might add. Whether secondary to activity, trauma or degeneration, back-ache has become one of the major healthcare problems in our society and the economic impact is astronomical.

Few individuals go through life without back problems and the burden on the healthcare system increases exponentially as people live longer and increasingly develop arthritis. The elderly whose problems all too frequently are neglected, often end up in a wheelchair; the younger and healthier members of society following traumatic episodes lapse into a lifetime of inactivity. Both add to the socio-economic burden.

Back problems are seldom simple and often complex. Even a routine disc herniation occurring in a teenager while sneezing during a moment of relaxation of the musculature, results in nerve root compression and scar tissue formation. Chemicals released from the disintegration of the nucleosus pulposus may cause acute/chronic irritation of nerve roots much as osteophytes, disc fragments and scar tissue result in nerve root compression, often with loss of sensation or even motor paralysis.

The process is invariably accelerated in professional athletes and those who have performed many years of intense manual labour.

Maintenance and Prevention

Muscle strengthening, stretching and maintenance programmes based on exercise are helpful. In the advancing years, these should be moderate in degree but daily and vigorous; generally one half hour plus in duration *(i.e. stretching, swimming, walking, Pilates, Yoga, etc.)*. This will keep the muscles strong and the tissues flexible. For optimum health this measure should be complemented with a balanced diet, vitamin and mineral supplements and the avoidance of inappropriate stress both physical and mental.

If the above methodologies are instituted in a disciplined, systematic fashion, most pathological conditions are minimized, delayed or avoided completely. Once symptoms have become established and cannot be controlled by conventional measures *(i.e. analgesics, anti-inflammatories (NSAIDS), muscle relaxants and cortisone)* a serious problem develops. The aforementioned measures simply mask or modulate symptoms but have no healing effect on the cells which compose the various tissue structures.

In due course, surgery may be necessary *(i.e. joint replacements, laminectomy, discectomies, fusions, etc.)*. In essence these therapies have limited curative benefit with regard to cellular health and indeed in most cases produce a long term deleterious effect that may be more harmful than the original disease.

All conventional therapies currently in use modulate symptoms but do not cure the pathology. Surgery attempts to repair the problem and is sometimes successful, but more frequently than not it falls short of its objectives and may make the condition worse and irreversible.

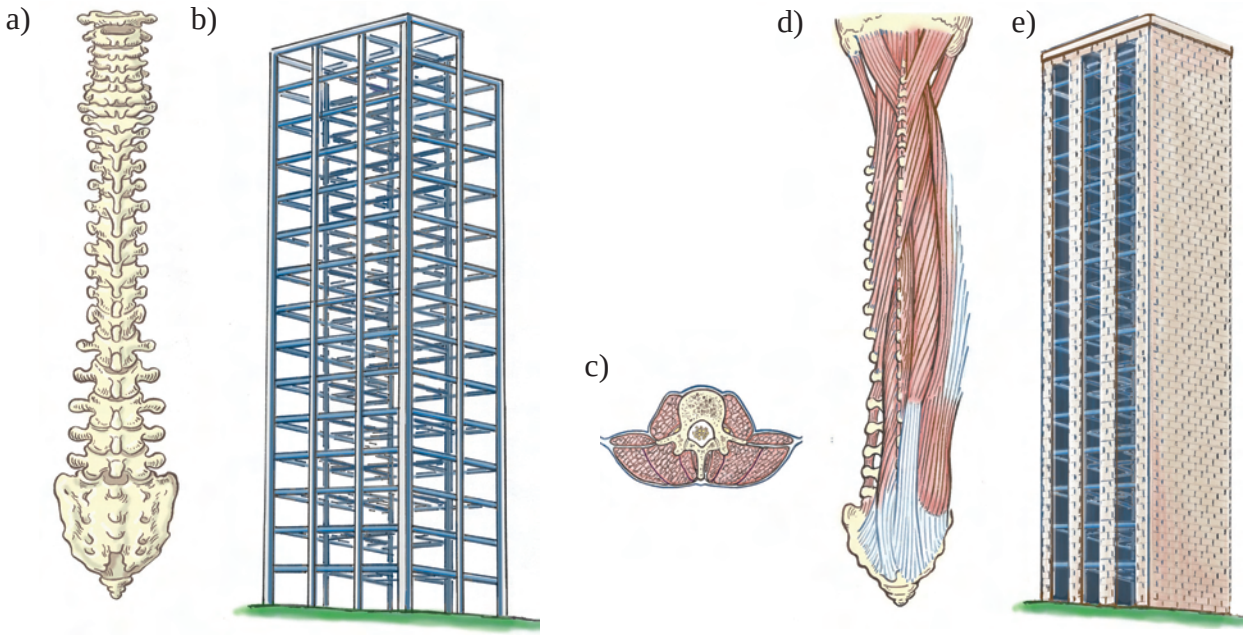


Figure 1 a) Spinal column without support is extremely vulnerable to force and stress. b) Steel infrastructure of a skyscraper without bricks and mortar would collapse with minimal stress. c) Cross section of spine with musculature. (Muscles comprise 75-80% of the bulk) d) Spinal column with muscle is 5 times more resistant to force and stress than bone alone. e) Building with concrete and mortar has a much greater stress tolerance than steel alone.

Classification of Therapies:

Symptom Modulation:	Definitive Therapies:
- Analgesics & NSAIDs	- Surgery
- Muscle relaxants	- Laser
- Cortisone	
- Interferential Current	
- Ultrasound	
- Diathermy/ Ice	
- Manipulation	
- Massage *(shiatsu, swedish, etc.)*	

Factors Contributing to Back Problems

1) Lack of exercise accompanied by loss of muscle mass, tone and flexibility

2) Dietary imbalances, depriving tissues of the proteins necessary to maintain muscle bulk

3) Depletion of hormone production (i.e. H.G.F. Estrogen, Testosterone)
- concomitant with aging, systemic diseases, etc.

4) Obesity which further increases the stress factor of the spinal column

5) High level sports accelerating the wear and tear process

6) Vehicular accidents resulting in STI, fractures, whiplash type injuries, etc.

Economic Impact of Back Ache/Pain

Statistics (U.S. Based):

- 90% of all individuals experience severe pain at some point in their life
- 26 million adults in the US suffer from back ache (10% of the population at any one time)
- 5 million Americans are permanently disabled in varying degrees by back pain
- 2 million Americans cannot work as a result of back problems
- Low back pain is responsible for close to a hundred million work-days lost per annum
- The economic loss is over 5 billion in healthcare dollars on an annualized basis
- Pain secondary to arthritis affects 40 million Americans and results in over 4 billion dollars in lost income per annum
- Close to 50 million Americans suffer chronic recurrent headaches resulting from back problems and spend close to 5 billion dollars a year on a variety of medications. The toxic effects of the numerous medications are incalculable *(i.e. hepatic failure, renal failure, gastrointestinal bleeding, etc.)* This seriously impacts patient health.

Pathological Conditions

1) Myofascitis (*inflammation of overlying muscles and fascia, adhesions, scar tissue)*
2) Herniated/bulging discs (Figure 3a)
3) Degenerative disc disease (D.D.D.) (Figure 2)
4) Scar tissue contractures
5) Osteophyte formation (Figure 3b)
6) Stenosis - foramina, spinal canal (Figure 2,3&4)
7) SI joint dysfunction
8) Facet joint syndrome (Figure 4)

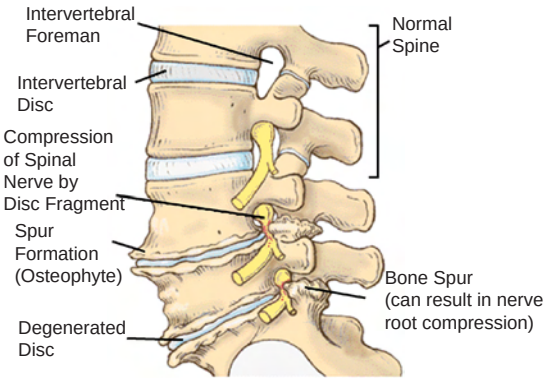


Figure 2. Degenerative Disc Disease resulting in compression of the spinal nerve roots.

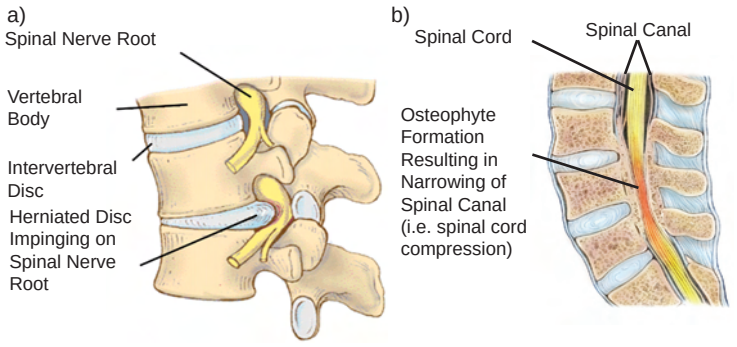


Figure 3
a) A diagram of a single disc herniation with compression of cord and nerve root (usually in younger age groups).
b) A diagram of spinal stenosis resulting from osteophyte formation. (obvious spinal cord compression)

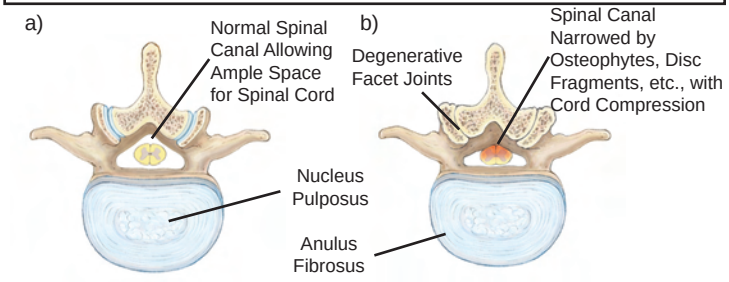


Figure 4
a) Normal spinal canal with ample space for spinal cord transgression.
b) Spinal stenosis lacking adequate space for spinal cord.

Conclusions

Probably the greatest beneficiaries of our technology are individuals that suffer from back pain and arthritis. This includes athletes suffering from myofascitis, facet joint syndrome, sacroiliac joint dysfunction and disc herniations with nerve root compression. More significantly, dramatic effects are obtained by sufferers of chronic degenerative osteoarthritis accompanied by spinal/foraminal stenosis with attendant neurological complications.

Many of the patients who come to us, either through word of mouth or referred by healthcare providers, arrive in wheelchairs or utilize canes; many have been bedridden for years. Usually after five to twenty treatments which are totally noninvasive, painless and easily applied, they become ambulatory and voluntarily lose their drug dependencies along with their mechanical supports. More significantly they experience the elimination of pain and regain mobility and quality of life.

Included are patients who have been taking up to thirty Tylenol tablets per day and over the past years have taken as many as fourteen medications at the same time. The latter in itself often results in addiction problems, sometimes worse than the basic pathology.

The most promising and least known technology currently available and one that can be delivered in a highly scientific non-invasive fashion is Low Intensity Laser Therapy. Unfortunately most patients and therapists including MDs, chiropractors, physiotherapists, etc. have little knowledge or awareness of this approach, and in the economic climate today, have little interest in exploring new technologies that are superior, but are not included in the "spider web" of compensatory codes imposed by HMO's, insurance companies and governments.

At Meditech we have developed a delivery system that is currently the most advanced on a global basis achieving a significant improvement/cure rate with all the above entities. Low Intensity Laser Therapy is truly the ideal therapeutic approach for back problems in the 21st century.

The therapy acts by converting light into biochemical energy, resulting in normal cell morphology and function, which causes symptoms to disappear. Aside from the gradual elimination of inflammation, various degrees of the ablation of scar tissue, and osteophytes at all levels, there appears to be little question that a thin layer of cartilaginous regeneration can occur. In our teaching clinic, attached to our corporate headquarters, we perform 600 patient treatments weekly and our significant improvement/cure rate is in excess of 93 percent.

Patients at the completion of the treatment often state "Why doesn't my doctor know about this?" As Marshall McLuhan said, "The medium is the message." Perhaps the medium should re-evaluate its objectives.

With "back problems" laser therapy should be the universal treatment approach and clearly establish its role as the treatment of choice. Thousands of our patients would agree.

Herpes Zoster (Shingles)

A Therapy at Last

Low Intensity Laser Therapy when properly applied has an infinite ability to heal. Along with a number of systemic, dermatological and musculoskeletal problems, can now add shingles to the list of conditions where Low Intensity Laser Therapy may be applied as an effective therapy.

Over the past two years at our rehabilitation centre, we have treated a number of patients afflicted with this sometimes severe viral infection and have almost been universally successful in treating these conditions.

Herpes in its many forms has long defied traditional therapeutic solutions; at present these comprise:

- Analgesics for pain.
- Anti-inflammatories to reduce the edema/erythema.
- Antivirals to reduce viral replication and shedding.
- Antibiotics to treat secondary bacterial infections.
- A variety of topical ointments.
- Cortisone in severe cases

In essence, there is no definitive approach and the therapies listed above simply modulate symptoms at best.

Symptoms:

- patient feels unwell (prodromal phase - may last from one day to two weeks)
- rash consisting of red spots followed by blister formation
- area extremely sensitive to touch and contact of any kind
- localized to one side of body only and follows nerves (dermatomes)
- may heal by scarring
- pain may be prolonged, along with extreme fatigue and other symptomatology concomitant with the disease

Course:

- must have previous history of chickenpox
- outbreaks are generally related to stress, immune suppression, infections, tumors and the use of pharmaceuticals

Pathogenesis:

Etiological factor is the varicella-zoster virus. Following an outbreak of chickenpox the virus lies dormant within the cells and neural pathways for many years after the patient has had the original attack.

- virus reactivates under the stimulus of stressful conditions
- may cause facial paralysis, blindness, encephalitis
- virus is present at site of rash and is contagious for up to a week after blisters develop
- more common in elderly but younger age groups not excluded

A vexing complication is post herpetic neuralgia as these patients continue to suffer from the signs and symptoms despite treatment with conventional therapies. The pain is not relieved and can be excruciating along with multiple serious sequelae.

There is some evidence that acyclovir and other antiviral drugs slow reproduction of the virus in the nerve cells but this is effective only to varying degrees and is not curative.

In the US, over one million people develop shingles annually and a significant percentage of these develop a complication called post herpetic neuralgia. The pain in these individuals may persist for months and years. The characteristics of this infection vary, are resistant to all forms of treatment and are prolonged. This can lead to depression and a total inability to function.

A number of treatments have been applied for this condition:

- Lidoderm
- Tens
- Nerve blocks
- Epidural injections

Again, these therapeutic approaches attempt to alter symptoms but do not cure the problem. A vaccine developed in 1995, is useful in prevention but has not been widely utilized. This vacine only has a 20 year effective duration. If children are innoculated early in life it leaves them prone to the more dangerous form of disease later in life, whereas being infected with chickenpox leaves them virtually immune for life.

The virus lodges in nerve pathways, myelin sheaths and cells. As the photos indicate we have treated a significant number of these type of problems over the past 2 years, with a rapid curative effect particularly in dealing with the post herpetic neuralgia problem. Post herpetic neuralgia generally persists long after the dermal lesions have disappeared, therefore cannot be pictorially displayed. It is suggested that low intensity laser therapy is the treatment of choice in these situations.

Herpes Simplex

Often, we see other herpes type lesions caused by viruses belonging to the same family of organisms i.e. herpes labialis (cold sores), herpes genitalis (lesions of the genito-urinary tract), etc. that are all variations of Herpes Simplex.

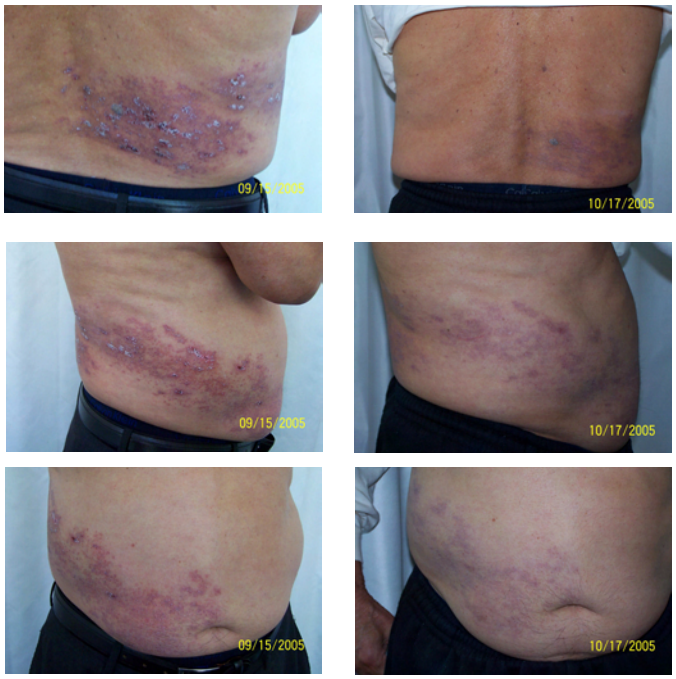
Presented here is a brief discussion of Herpes Simplex, the most common form of herpes. It has an overall prevalence of 20% in the United States, with a slightly higher proportion of infected females (26%) than males (18%). These cases are much easier to treat and resolve. Inevitably they will resolve spontaneously over the course of time.

There are two main benefits of Low Intensity Laser Therapy in treating Herpes Simplex. The first is the rapid resolution of symptoms such as edema, blisters, pain, etc. This effect is most likely due to a number of physiological processes *(i.e. increased micro vascular perfusion, improved cellular metabolism, etc.)*. The second benefit is a reduction in future outbreaks following treatment with LILT. A double blind clinical trial on the effects of LILT on herpes simplex (Shindl & Neumann, 1999) reported that after 10 treatments with LILT the average reoccurence-free interval between outbreaks was 37.5 weeks, compared to 3 weeks in the placebo group. The results of this study support the clinical experience at Meditech, proving that following treatment with LILT the symptoms are resolved more rapidly and symptom free periods are of longer duration.

Conclusion

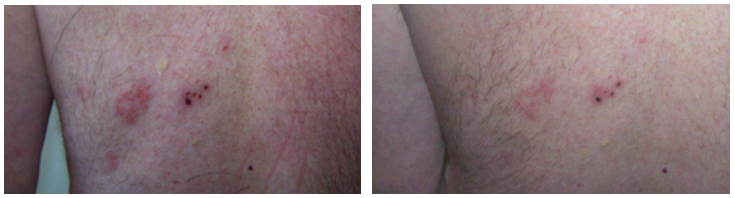
Again it would be useful to perform a double blind clinical study using LILT to confirm the clinical results presented. At the same time the assumption may be made that LILT offers a safe effective solution in the treatment of a wide range of viral infections.

A picture is always worth a thousand words and the results below speak volumes regarding the curative effect of LILT for the treatment of both Herpes Zoster (Patient 1 and Patient 2) and Herpes Simplex (Patient 3 and Patient 4).



Initial **Intermediate**

Patient 1. Male 72 years;
Acute episode of Shingles and post herpetic neuralgia.
(First visit 6 weeks post onset of initial symptoms)
8 treatments over 1 month.



Initial **Intermediate**

Patient 2. Male 57 years;
Acute episode of Shingles and post herpetic neuralgia.
4 treatments over 8 days.
100% reduction in pain

Initial

Final

Patient 3. Male 33 years;
Acute episode of Herpes Simplex.
3 treatments over 20 days

Initial

Final

Patient 4. Female 38 years;
Acute episode of Herpes Simplex.
2 treatments over 3 days

SOCIAL COMMENTARY

Fred Kahn, M.D., F.R.C.S.(c)

Managed Health Care

Much as Celebrex and Vioxx were hailed as the panacea for arthritis, Managed Health Care was advertised as the proverbial savior of health care systems throughout the world a decade or so ago.

With the much-hyped takeover of medical practice by the corporate sector, the people believed that healthcare would be magically transformed. All problems would be solved, cost effectiveness would be the keynote and all patients would receive the ideal care that everyone desires and deserves. All that would be necessary was to sign up with a recommended provider, either under the corporate umbrella at no cost, or for the private citizen at minimal cost.

The corporate intelligentsia i.e. HMOs and insurance companies in alliance with and the approval of governments, (if the politicians in power thought it would bring in votes and increase their personal and election coffers,) were suddenly in concert. It was an assault that would bring the ultimate in healthcare to everyone i.e. accessibility, universality, affordability, freedom of choice, all bandied about in advertising slogans, like manna from heaven. No longer would the greedy doctors control healthcare but would become providers only, contracted by the new gate keepers. Just retribution for those who would prey on the misery of others for personal profit.

What has transpired? Over the past five years Celebrex, Vioxx and the other miracle drugs are literally and justifiably gone. Managed Health Care has proven to be nothing more than another "corporate profit grab" taking the majority of dollars out of the healthcare system for the personal gain of a few. Initially, lauded by Wall Street, Madison Avenue and a collection of major league law firms, the conventional corporate profiteers raped the system and created a multitude of billionaires and more than a few millionaires while taking patient care to new lows.

In the "prehistoric" fee-for-service system, physicians provided care directly to patients and were compensated by the client to the best of that individual's ability. It is safe to assume in that arrangement, 90% of healthcare dollars went towards patient care. Under the corporate and government umbrella 80% of healthcare dollars are "eaten up" by management and only 20% are available to pay the actual providers of care, an interesting statistic indeed.

To some extent doctors must shoulder a significant amount of blame for permitting this travesty to occur. Individually egotistical, envious of more successful colleagues and always willing participants in schemes that promise to enhance their personal influence, they are frequently too willing to follow the "yellow brick road".

Today, the medical profession lacks positive objectives and a united front, best characterized by inaction. The result, long waiting lists, diminishing quality of care; all consequences of collective passivity; Short-term thinking for permanent pain. One need only read the many popular novels in the marketplace today i.e. Michael Palmer's "Society", Michael Crichton's "State of Fear", etc. to fully comprehend the current state of affairs. Managed Health Care once hailed as the ideal model, equates to large profits for a few and misery for most.

Where does one go from here? Invariably, it is difficult to turn back the clock. Individuals must form cooperatives much on the same basis on which insurance companies were originally founded. These should be non-profit, whereby the individual controls his destiny, chooses his physician independently and on the basis of quality of care. Most importantly it removes the middle men of misery. Only by adapting this type of strategy can viable health care systems be ensured.

International Laser Conference Returns to Toronto

Many of the leading researchers and clinicians in the field of Low Intensity Laser Therapy will be returning to Toronto this year for Meditech International's fourth annual conference. This will be held at the Marriott Bloor Yorkville hotel from the 21st to the 23rd of April, 2006. There will be numerous outstanding presentations from a diverse group of speakers.

The following authorities highlight this year's conference:

Mary Dyson, Ph.D.
Emeritus reader in Tissue Repair Biology, Kings College, University of London, London, UK.

Chukuka Enwemeka, Ph.D., FACSM.
Dean of the School of Allied Health and Life Sciences, New York, New York, USA.

Fred Kahn, M.D., FRCS(C),
President and Founder, Meditech International Inc., Director, Laser Rehabilitation Clinic, Toronto, Canada.

Tiina Karu, Ph.D.
Head of Laboratory of Laser Biology and Medicine. Institute on Laser and Informatic Technologies Russian Acadamy of Science, Moscow, Russian Federation.

Greg Gillis, M.D.
Adjunct Professor, Department of Family Medicine, University of Western Ontario, London, Ontario, Canada.

Shimon Rochkind, M.D.
Director of the Peripheral Nerve Reconstruction division at the Department of Neurosurgery at Tel-Aviv University, Tel-Aviv, Israel.

Chuck Mooney, C.A.T.(C)
Former Head Trainer of the NBA Toronto Raptors Basketball Club Toronto, Ontario, Canada.

Register well in advance as this conference will provide a unique opportunity to learn about the basics of laser therapy, including:

- Mechanisms of Action
- Current Research
- New Clinical Applications

For more information on attending please contact:

Heather at (888) 557-4004 ext. 122 or email : conference@bioflexlaser.com

In the News at Meditech Cont.

LILT Training Seminars 2006

Meditech International Inc., promotes the correct medical application of Low Intensity Laser Therapy (LILT) with regular monthly seminars. In 2006 these will be held on:

February 17-18
March 14-15 (Arcadia, CA)
March 17-18
April 7-8
April 24-25
June 16-18
July 14-15
July 30-31 (Las Vegas, NV)
August 11-12
September 10-11 (Orlando, FL)
September 15-16
October 20-21
November 17-18
December 8-9

Additional dates are available depending on class size. Confirm registration one week in advance.

The Meditech LILT training program is a 2 day seminar, focusing on the theory and application of LILT. All seminars include course material, structured classroom presentations and hands on clinical exposure. These seminars are held at the corporate offices of Meditech International Inc.

Please direct any and all additional information requests to Meditech International Inc.

For course program e-mail:
heather@bioflexlaser.com

Meditech Laser Rehabilitation Clinic
411 Horner Avenue, Unit 1
Toronto Ontario M8W 4W3
Phone: (416) 251 1055
Fax: (416) 251 2446
www.bioflexlaser.com
info@bioflexlaser.com