CONCUSSION

PILOT STUDY

Okanagan Laser Solutions

Five-year study on the impact of Laser Therapy on both newly acquired and long-standing concussion patients of all ages of both male and female patients.

DR. MARKUS THIEL | BPE, RT, DC

Dr. Thiel conducted a five-year study on the impact of Laser Therapy on both newly acquired and long-standing concussion patients of all ages of both male and female patients. The charts below speak to the profound success in full resolution in treating all forms of concussions.

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CONCUSSION STUDY

ABSTRACT: Efficacy of low-intensity laser therapy in patients with acute concussion and chronic post-concussion syndrome.

BACKGROUND: In Canada, 210,000 concussions are reported each year, with many more going unreported. Current government guidelines for concussion treatment involve rest and gradual return to activity. There is no recommendation of or reference to resources regarding treatment of lingering symptoms of concussion. Approximately 50% of concussion patients report symptoms greater than three (3) months after incident, classified as post- concussion syndrome (PCS). The median duration of PCS symptoms is seven (7) months, with many experiencing years of impairment; however, one study found 84% of participants still experience psychological deficit(s) two years after initial injury. Low-intensity laser therapy (LILT) and its anti-inflammatory effects may provide improvement in concussion and post-concussion syndrome (PCS) symptoms.

AIMS: The purpose of this pilot study was to determine potential efficacy of low-intensity laser therapy (LILT) in treating concussion and chronic post-concussion syndrome (PCS).

METHOD: Participants will be enrolled in a program with LILT treatment twice weekly for a maximum of 14 weeks based on the patient's response or resolution determined by our clinic director. There will be two separate groups that participants are enrolled in; chronic (n = 18; age 43.17 ±16.68; 9 males, 9 females) and acute (n = 15; age 41.3 ±22.88; 3 males, 12 females) post-concussion patients. Treatments will focus on the suboccipital muscles, the cervical spine, and its supporting musculature. Symptoms will be monitored using the Rivermead PCS questionnaire and subjective reporting.

Laser Therapy for Concussions – ACUTE (<3 MONTHS)

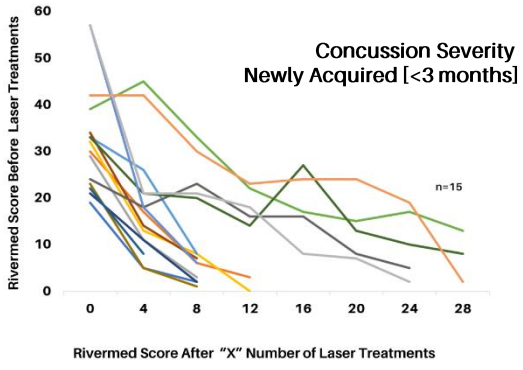

Figure 1: Total Rivermead Symptom Severity Score for patients recovering from a concussion within the last 3 months – acute. Patients were discharged at a score < 5 unless by patient's own discretion.

Laser Therapy for Concussions – CHRONIC (>3 MONTHS)

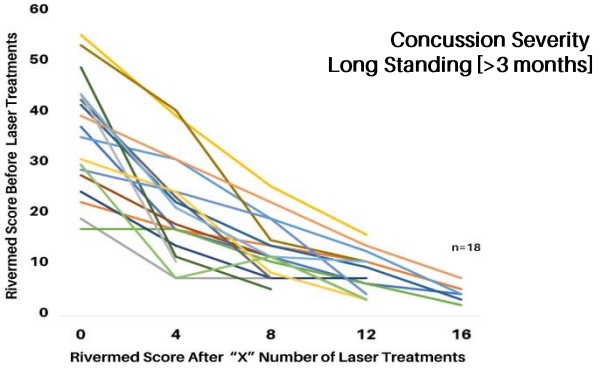

Figure 2: Total Rivermead Symptom Severity Score for patients struggling with post-concussion syndrome (PCS) due to a concussion greater than 3 months ago – chronic PCS. Patients were discharged at a score of < 5 unless by the patient's own discretion.

CLINICAL SIGNIFICANCE:

Participants showed an average decrease of 43.2% in symptom severity after 4 treatments. Acute concussion patients showed a 73.2% decrease in the severity of symptoms after an average of 12 treatments, while chronic PCS patients showed a 76.7% decrease in symptom severity after an average of 12 treatments. Subjective patient reports show an improvement in impairment, most notably in headaches, dizziness, fatigue, light and noise sensitivity, and ability to concentrate in both groups. A reduction in symptoms during both physical and mental exercise was also noted.

among ALL
CONCUSSION PATIENTS

96%

SUCCESS RATE
in resolution of **SYMPTOMS.**

This pilot study shows that LILT has the potential to contribute to improved recovery from concussion and resolution of PCS. Among all concussion patients, there was a 96% success rate in treating concussions whether they followed their care plan or chose to discontinue at their own discretion before completing their care. These results can inform large-scale studies to improve upon current brain injury treatment options.

MEDICAL HIGHLIGHTS:

- Respiratory Therapist, at VGH Provincial Trauma Centre. Attending therapist coverage included the ER, trauma units, and the various ICU's including spinal, cardiac, burn, and neurological units.
- Doctor of Chiropractic - Canadian Memorial Chiropractic College.
- Doctor of Chiropractic and Sport Therapist, providing care for local semi pro, professional and Olympic athletes.
- Certified Laser Therapist - BIOFLEX® Professional Laser System. Clinical Concussion Care & Treatment.

Dr. Markus Thiel
BPE, RT, DC

BIOFLEX® LASER THERAPY TREATMENTS

The advantages of Laser Therapy are supported by over 4,000 research articles and 500 clinical investigations. At Okanagan Laser Solutions, we utilize the BIOFLEX® Professional Laser System, which has been designed and developed by Meditech International Inc. in Canada. This sophisticated laser therapy device is entirely non-invasive, making it an attractive choice for patients looking for effective and gentle treatment options. There are no contraindications to care.

Our laser therapy treatments are a three-step process. The BIOFLEX® Professional Laser System utilizes superluminous diodes (SLDs) and laser probes to treat and repair injured tissue with photon energy. It is through the combination of our red SLD array, infra-red array, and our infrared laser device that our treatments see such great success. Each array operates at a different frequency, allowing for different levels of penetration into the tissue and optimal saturation of the injured tissue. During each laser therapy session, you will receive all three individual therapies.

The BIOFLEX® Professional Laser System promotes healing at the cellular level rather than merely alleviating pain and other symptoms temporarily. The light penetrates deeply into injured tissues, muscles, tendons, ligaments, and joints. Healing occurs as laser therapy enhances the generation of adenosine triphosphate (ATP), which acts as the "fuel" for your cells, thereby increasing energy availability for tissue repair and recovery. Laser therapy can return normal cell function, addressing chronic conditions, alleviating pain and inflammation, restoring mobility and range of motion, while also reducing scar tissue formation and accelerating healing. One significant advantage is that patients frequently find they can lessen their reliance on medications and, in some cases, even avoid surgery.

Dr. Markus Thiel | BPE, RT, DC heads the team, leveraging his extensive clinical expertise to create a **proprietary concussion treatment protocol that achieves a 96% success rate in alleviating concussion symptoms.**