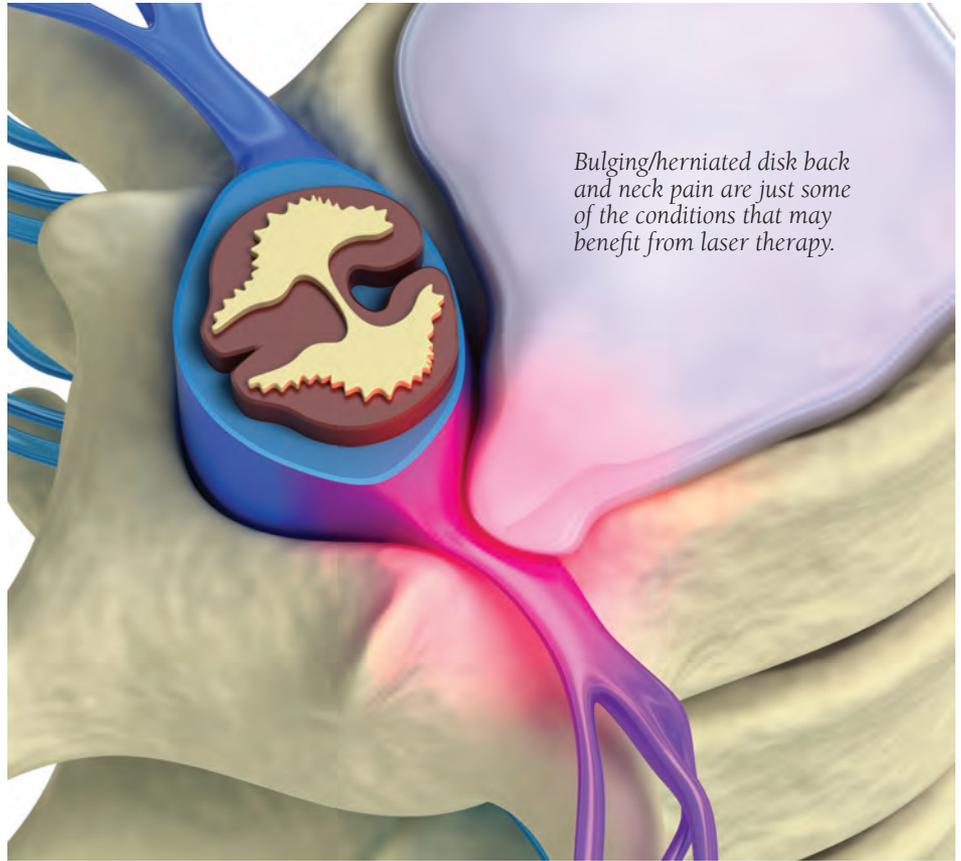


Class IV Laser Therapy, Part 2

Bulging disc back pain and more



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In part 1 of this article, the author discussed the technical profile of class IV laser therapy and introduced ideas for incorporating this technology into the chiropractic clinic. In part 2, clinical applications for class IV laser therapy will be discussed along with their proposed mechanisms of action. Two case studies will be presented.

The range of applications of class IV laser therapy is expansive and growing. The doctor who adds this advanced therapeutic tool to his/her healing arsenal possesses a unique, expanded and unusually effective portfolio of therapeutic treatment options. Class IV laser therapy increases your ability to offer every patient the most advanced approach for connective tissue healing. Laser therapy is a perfect adjunct to chiropractic care, an effective chronic pain management system and a robust treatment for acute as well as chronic injury.

Just how does the laser therapy treat such a diverse and broad set of soft-tissue injuries? The deep-tissue class IV laser therapy accelerates the body's own natural healing process through photobiostimulation.

A CLOSER LOOK AT PHOTOBIOSTIMULATION

Laser therapy delivered to specific soft tissue at the appropriate wavelengths will enhance cellular metabolism – a direct cause for healing. This “biostimulation” is a remarkable physiological benefit for any patients suffering with soft-tissue injury or damage.

Let's explore what is going on at the cellular level. We know, obviously, that the body is a self-regulating, self-healing complex organism. How does the class IV laser light boost the body's natural abilities? The effect of class IV laser therapy is to target specific cells – rather than specific pathologies in the body – and deliver photons to the area. These photons are absorbed by the cells' chromophores. This stimulates the cell to perform its natural functions at an *enhanced rate*.¹ Class IV laser therapy effectively

stimulates the metabolism of the cell(s), and this enhances the functionality of all its/their natural processes.

Our bodies require oxygen to function. Healing is enhanced when the flow of oxygen to a specific (injured or ill) area of the body is increased. Our bodies perform this function continually via the respiratory process wherein hemoglobin carries oxygen from the lungs to the cells and is reduced, allowing oxygen to flow through the respiratory chain to the terminal enzyme cytochrome c oxidase. From there, it is reduced again to create energy for the cell. Oxygen then exits the cell in the form of adenosine triphosphate (ATP) – i.e., energy.

Increased amounts of ATP are produced as a result of laser therapy. ATP is the substance responsible for cellular energy production.

Increased ATP in soft tissue jump-starts a series of profound healing effects:

- increased cellular function;
- improved circulation;
- reduced inflammation;
- improved transport of nutrients across the cell membrane;
- increased circulation;
- influx of water, oxygen and nutrients to the damaged area;
- reduced swelling, muscle spasms, stiffness and pain.

In short, in order to stimulate healing of injured soft tissue, the objective is to effect an increase of local blood circulation, a reduction of hemoglobin, and both the reduction and immediate re-oxygenation of cytochrome c oxidase so the process can start again. Laser therapy accomplishes this.

The absorption of laser light and ensuing biostimulation of cells results in curative and analgesic effects, from the very first treatment onward.

Because of this, even patients who are not strictly chiropractic patients can be helped. Any patient suffering with shoulder, elbow or knee pain benefit greatly from class IV laser therapy. It also offers robust post-surgical healing and is effective in treating infections and burns.

TWO CASE STUDIES

Case Study 1

Patient AA, a 40-year-old male, presented with severe low back pain and unrelenting sciatica lasting 18 months and due to a L4-L5 disc herniation. He was awaiting

Conditions benefiting from class IV laser therapy include:

- Bulging disc back pain or neck pain
- Herniated disk back pain or neck pain
- Degenerative disc disease, back and neck – stenosis
- Sciatica – knee pain
- Shoulder pain
- Elbow pain – tendinopathies
- Carpal tunnel syndrome – myofascial trigger points
- Lateral epicondylitis (tennis elbow) – ligament sprains
- Muscle strains – repetitive stress injuries
- Chondromalacia patellae
- plantar fasciitis
- Rheumatoid arthritis – osteoarthritis
- Herpes zoster (shingles) – post-traumatic injury
- Trigeminal neuralgia – fibromyalgia
- Diabetic neuropathy – venous ulcers
- Diabetic foot ulcers – burns
- Deep edema/congestion – sports injuries
- Auto and work-related injuries

discectomy surgery when he flew to our clinic from London, England. Straight leg raise originally measured at 30 degrees. He was unable to walk without a cane/assistance. Pain was so intense that he had already been on work disability for over eight months, when he presented. After a course of integrated therapy featuring class IV laser therapy, his low back pain and sciatica were gone. All orthopedic and neurological tests, including straight leg raise, returned to within normal limits.

Case Study 2

Patient KQ, a 79-year-old male medical doctor, suffered from severe low back pain as well as stenosis and degenerative disc disease causing a peripheral neuropathy and, consequently, impairing his ability to walk without losing balance and falling. This pathology had been symptomatic for three years and had interfered with all aspects of the patient's lifestyle. After a course of 20 sessions of class IV laser, in conjunction with non-surgical spinal decompression, pain was gone. Sensation to the patient's feet was restored and he was ambulatory and happily active once more.

ESSENTIALS FOR SUCCESS

Effective laser therapy treatment is a direct function of power of the laser light and dose delivered. There are differences

across units that are available on the market, in the wavelength, power density, pulse modulation, and esthetics of the system. These parameters affect penetration depth, dose distribution, treatment time and the estimated biological effect. There is not any one dosage or setting that guarantees a cure for an ailment or injury. But certain techniques do provide better results than others and are more effective for particular symptoms.

Ideally, you want to have, in your clinic, a class IV laser unit that has adjustable power density output and frequency modulation. Some manufacturers offer models with a comprehensive set of built-in pre-set programs, which allow for a wide range of treatment protocols. These also provide reliable, safe, consistent outcomes.

It's also wise to offer the chiropractic patient a class IV laser therapy session prior to an adjustment. Class IV laser therapy helps to actually reduce and at times eliminate the body's occasional muscle splinting and guarding response to adjustments. The benefits can lead to more effective, comfortable and longer lasting results from chiropractic care. •

REFERENCE

1. Stephens, BJ. *Fundamental Mechanisms of Laser Biomodulation*. 2010. www.ocspinedisc.com/wp-content/uploads/2011/03/K-Laser_brief.pdf.