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Laser/Light Therapy Approved Winter 2007 BackTalk

A variety of low-level laser and light therapy (LLLT a.k.a phototherapy) is available to Oregon chiropractic physicians as a standard treatment for NMS conditions. Western States and other chiropractic colleges have current core curriculum on this subject. In addition, WSCC is continuing work on future curriculum to cover advances and new applications in technology of this field. LLLT has been used to speed wound healing, stimulate tissue repair, reduce swelling and edema, and reduce acute and chronic pain. LLLT has been popular in Europe and Asia. More recently, in 2002, the United States FDA granted 510 (k) clearances allowing for healing and pain relief with various soft tissue disorders including carpal tunnel, rheumatoid arthritis, bursitis, tendonitis and more.

Following recommendations from the OBCE ETSDP committee (a.k.a. Examinations, Tests, Substances, Devices, And Procedures), the OBCE approved and reaffirmed as standard use of Class I-IIIa lasers/phototherapy for use by chiropractors (as well as certified chiropractic assistants!) as a physiotherapy modality.

The OBCE also approved use of Class IIIb & IV "hot" lasers for use by chiropractic physicians to treat NMS conditions. (Class IIIb & IV laser therapy for cosmetic purposes is still under discussion.)

Chiropractors must be properly trained for use of all LLLT, especially Class IIIb & IV. Training is usually available from the vendors of these devices. Class IIIb for NMS conditions does not require detailed special training other than provided by vendors, however use of Class IV devices requires strict adherence to safety protocols. Minor surgery training, of course, should be more extensive.

Phototherapy involves the application of specific wavelengths of light energy capable of penetrating into tissue and being absorbed by cells. Light energy can be produced by low level laser and/or super luminous diodes (SLDs). Sufficient energy must be delivered to target tissue to trigger a response. Light is absorbed by irradiated tissue where the light energy is transformed into biochemical energy, which is then available for photochemical cell activities.

The FDA has classified lasers into six categories based on their potential damage to the eye. They are:
Class 1: Safe to human eye or contained within device, no labeling required.
Class 2: Low power lasers with output less than 1 mW. Labeled, "CAUTION – Laser Radiation: Do not stare into beam"
Class 2a: Eye damage can occur if laser enters eye more than 1,000 seconds. Labeled: "CAUTON- Laser Radiation: Do not stare into beam"

Class 3a: Power output up to 5 mW. Direct eye contact for short periods is not hazardous, but viewing laser through magnifying optics such as eyeglasses can present a hazard. Labeled: "CAUTON- Laser Radiation: Do not stare into beam or view directly with optical instruments."
Class 3b: Involves certain risk. Laser output 5mW to 500 mW. Labeled "DANGER – Visible and/or invisible laser radiation – avoid direct exposure to beam."
Class 4: High power lasers with output greater than 500 mW. Involves definite risk. Labeled "DANGER – Visible and/or invisible laser radiation – avoid eye or skin exposure to direct or scattered beam."

According to Western States instructor Joel Agresta PT, DC, a patient treated with Class IV must wear goggles. "Class IV lasers have great benefits if handled properly and can deliver more energy in less time, but proper training and understanding of the contraindications is imperative. As far as I understand, the manufacturers (i.e., K-Lasers and Avicenna) issue specific protocols that keep these lasers safe for NMS conditions. These protocols have some degree of safety built into them. By their nature they do require a higher level of safety precaution, but when following the programmed protocols it appears that they are safe."

He also said by law, Class III and above must be stored in a locked cabinet. Dr. Agresta says that "photobiostimulation" stimulates or speeds up the inflammatory process and resultant healing when lower doses are used. However, he says that at higher doses starting around 100 to 200 Joules/cm^2 (Joules/cm^2 = power/beam area x time) inhibitory or negative effects may occur.

The ETSDP Committee and the OBCE reviewed a wealth of published clinical literature which documents many therapeutic applications of LLLT.

(Many thanks to Dr. Agresta for his expert advice on this subject.)