

VETERINARY MEDICINE TODAY

Laser Therapy – Part III

In the last twelve years since the establishment of the North American Association for Laser Therapy, a preponderance of published scientific evidence is now available for review supporting the therapeutic value of this exciting new technology. In addition, with the thousands of practitioners around the world utilizing it with their patients on a daily basis and receiving positive feedback, the question should no longer be, “Does it work?” but instead, “How can I best utilize this new technology?” And today, with the recent FDA approval of the more powerful Class IV laser, I continue to find new answers to that question. In the past seven months, after personally treating hundreds of patients suffering from a wide variety of ailments, I am no longer surprised by the positive results that I am seeing, in fact, I’ve come to expect it. On the other hand, I also realize that it is just another tool that we can utilize to help our patients; it is truly not a panacea for every problem. Everything has its own limitations, and laser therapy is no exception. For example, chronic, longstanding conditions will often require several treatments before any positive results are seen; and in some cases, the pain may actually get slightly worse before any improvement is made, as the tissue begins to heal. A second example would be partially torn or stretched ligaments. While I have witnessed phenomenal results after treating damaged knee and other joint ligaments, if the patient re-injures it before it is completely healed, a return to lameness is expected. At any point, if the ligament sustains a complete tear, the only hope for repair is surgery; although the laser can still be employed throughout the rehabilitation, aiding the speed of recovery.

So how does this relatively small box (with the price tag of a nice automobile) actually work? In order to properly answer this question, I need to break the machine down into three main components: an energy source – electricity; a lasing or amplifying medium – which stores the energy supplied to it; and a resonating cavity that is bounded by mirrors – with one end less than 100% reflective, allowing the release of charged photons (energized light) of a single wavelength to pass through it and down the cable connected to the working hand piece, where it is directed into the damaged or inflamed tissue. Essentially, as energy is supplied to the lasing medium, collisions of an energized atom and a spontaneously emitted photon results in stimulated emission of two photons. These two photons in turn collide with other atoms and a result of this chain reaction is an avalanche of photons all with the same photon energy and wavelength, resulting in the production of the laser light.

Next month, with some understanding of this background information, I want to discuss how laser light affects abnormal tissue.

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